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REMEDIAL PROJECT MANAGERS' MEETING

NASA/JET PROPULSION LABORATORY

4 September 1997

ATTENDEES:

Jon Bishop, RWQCB-LA

Charles L. Buril, JPL

James Chang, EPA

Mark Cutler, Foster Wheeler

Richard Gebert, DTSC

Stephen Niou, URS

Judith A. Novelly, JPL

B.G. Randolph, Foster Wheeler

Peter Robles, Jr., NASA



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Reported by: Lester R. Linn, Jr., CSR 1054

Pasadena, California

4 September 1997

8:54 A.M.

BURIL: Let's just go ahead and kick right into the agenda that we've got here. I have a lot of data to pass along and some ideas to kick around.

Current project status. As you all know, we've been doing our construction on our vapor wells and our monitoring wells. Rather than me try to remember exactly where we're at, I know Mark just went out and checked with his guys on the groundwater. B.G. I think has already got a lot of information for us on the soil vapor and such, so why don't I let them pick up.

Mark, why don't you start off and tell us how we're doing on the groundwater wells.

CUTLER: The three new groundwater wells for OU-1 are all installed and the West Bay systems are all installed. Development in the West Bay system in complete in Well 24. It looks like today they'll finish the West Bay development in Well 22 and then move on to Well 23. So probably within a week, week and a half we'll be done with all the development.

We hope to get started with our next

1 groundwater sampling event probably within a week.  
2 There's a little bit of funding and then some  
3 procurement issues after the funding is in place.  
4 So we'll get started as soon as we can.

5 BURIL: Again, the funding is just a matter of  
6 getting the paperwork through. There's no wait  
7 there as far as availability or anything like that.  
8 So we're looking in good shape for the start-up on  
9 this thing.

10 I think one of the questions that I have  
11 that I'd like to pass along to the agencies is  
12 during the development of the wells, we're, of  
13 course, generating a lot of water that is put in  
14 tanks as well as some formation water.

15 The concern that I have is that if we have  
16 perchlorate in the water and, say, that we actually  
17 have it at greater than the 18 parts per billion  
18 provisional level that the DHS has set up, what can  
19 we do with it?

20 Has anyone come to you with those kinds of  
21 concerns, if you know?

22 BISHOP: No.

23 BURIL: No.

24 ROBLES: That's what we figured. "I don't  
25 know."

1 BURIL: We're planning on just holding onto it  
2 until we can figure out what to do. But I was  
3 looking to you folks to --

4 GEBERT: Number one, it's not hazardous, I mean,  
5 by the --

6 BURIL: No, it's not.

7 GEBERT: -- definitions of the health --

8 BURIL: No, it's not. And I guess that's the  
9 question I have, is: Is it a concern that we really  
10 have to be concerned with?

11 BISHOP: Well, what would you do with it if  
12 there was no perchlorate in it?

13 BURIL: If there was no perchlorate we'd be  
14 sending it to a recycling facility. I can't  
15 remember. Do you remember the name of the place?

16 RANDOLPH: Southwest Industries.

17 BURIL: Yes. That was the one that we've used  
18 in the past. It will probably be one like that.  
19 They basically just treat the water and then dispose  
20 of it under their permits.

21 CUTLER: It's really pretty clean.

22 BISHOP: I take it they're not likely to want  
23 that water.

24 BURIL: I don't know. I haven't asked the  
25 question yet because I wanted to find out if there

1 was a -- well, a regulatory concern from the  
2 standpoint of having perchlorate in the water and if  
3 it's in excess of that 18 parts, knowing that  
4 whatever treatment that they do it's not going to  
5 touch this stuff.

6 If that poses a concern on the part of the  
7 agencies, and if so, how you might have handled this  
8 at other sites if you've had that experience. It  
9 doesn't sound like you've had, so --

10 BISHOP: Well, not with perchlorate. We've had  
11 it with other chemicals of concern.

12 BURIL: Yes

13 BISHOP: Usually, and this may be different for  
14 EPA and DHS, if it's a treatment problem where it's  
15 difficult to treat it --

16 BURIL: Yes.

17 BISHOP: -- which is essentially with  
18 perchlorate, but you have it on site, we'd rather  
19 have you just dispose of it back on site.

20 BURIL: Oh.

21 BISHOP: Because if you take it away, you're  
22 putting it somewhere else.

23 BURIL: Yes. Well, I see that logic. How do  
24 the other organizations do that? I mean, do they  
25 use it for irrigation, or what?

1       BISHOP: They use it for irrigation. What a lot  
2 of folks have done is when they're doing their  
3 development of their wells is that they discharge it  
4 right there next to the well.

5       BURIL: Really? Just spread it out on the  
6 ground and let it sink back in?

7       BISHOP: Yes. But you may not have much  
8 opportunity to do that.

9       NOVELLY: It may get into the storm drains.

10       BURIL: We don't have that much open area, so to  
11 speak, to be able to do that. I think the biggest  
12 landscaped area we've got is right out here in front  
13 of 180. Just in the mall area here is probably the  
14 largest.

15       NIOU: And you don't have an injection well.

16       BURIL: No. Okay. Well, that's a suggestion at  
17 least that we might be able to consider.

18               Is there anything from a regulatory  
19 perspective that would prevent, say, Southwest  
20 Industries from taking the water if it has greater  
21 than 18 parts per billion? As Richard said, it's  
22 not hazardous.

23       GEBERT: I believe it would be up to them.

24       BURIL: Yes. But in terms of a --

25       GEBERT: Not from our agency, no. Not from us.

1 BURIL: Jon, do you fellows have anything  
2 that we could look at?

3 BISHOP: Where are they located? Do you know?

4 BURIL: I would have to find out for you.

5 BISHOP: My concern is, you know, obviously,  
6 they're likely to have a treatment process for  
7 volatiles and metals and things like that.

8 BURIL: Yes.

9 BISHOP: And then they probably have an NPDS  
10 permit for discharge --

11 BURIL: And they're not sampling for  
12 perchlorate. And we really don't want to be adding  
13 to the spread of it. Yes. Yes. I see what you're  
14 saying.

15 BISHOP: Now, I'm sure it's pretty low volume of  
16 water we're talking about.

17 BURIL: How much water are we talking about,  
18 Mark? Do you have any idea?

19 CUTLER: No. I haven't been out there lately.

20 BURIL: B.G., do you have an idea?

21 RANDOLPH: It's probably close to 120,000  
22 gallons.

23 CUTLER: Is that what they use, drilling mud as  
24 well?

25 RANDOLPH: Yeah. The water has to be drawn off.



1 BURIL: Okay. Well, I guess what we can do, and  
2 maybe I'll start off by saying we'll check with some  
3 of these folks and if they have an NPDS permit,  
4 obviously that's going to be a concern for them.  
5 You know, tell them that we think there might be  
6 perchlorate. Now, of course, we haven't analyzed  
7 the water yet, have you guys?

8 CUTLER: No. And I can't imagine all of it  
9 being above an action level.

10 BURIL: No, I can't either.

11 CUTLER: Some of it --

12 BURIL: Some of it --

13 CUTLER: -- might be.

14 BURIL: -- you might blend it with other stuff  
15 that's very low and you might get a real moderate  
16 concentration as a result, would be my guess. What  
17 exactly it is, I don't know yet.

18 But we'll check with the folks that we've  
19 used in the past for disposal.

20 ROBLES: See, the problem, if the perchlorate in  
21 the water that descends off Lab is below 18 parts  
22 per billion for them to discharge -- it's when it's  
23 above 18. Okay.

24 BURIL: And then barring that particular avenue  
25 of disposal, then, we'll have to look at maybe what

1 we can do here in the Lab. I'm sure we can find  
2 some way of dealing with it, but I'm not sure  
3 exactly how.

4 See, all our drinking water systems,  
5 irrigation systems, everything, are all on the same  
6 line.

7 BISHOP: Right.

8 BURIL: So that kind of makes it difficult for  
9 us to do the irrigation approach. In weather like  
10 this, maybe just spray it in the air and evaporate  
11 it.

12 BISHOP: Well, check into those and then get  
13 back to me --

14 BURIL: Sure.

15 BISHOP: -- and we'll start exploring other  
16 options.

17 BURIL: Okay.

18 BISHOP: I mean, it's obvious that we need to  
19 find the information out. We need to deal with the  
20 development water.

21 BURIL: I think one of the things, too, is the  
22 water that we do when we purge various wells, we're  
23 probably going to have a similar scenario but  
24 smaller volumes.

25 BISHOP: Right. Much.

1 BURIL: Much. Probably a tenth of that, I would  
2 guess, if that.

3 BISHOP: Because these are West Bays, right, for  
4 the most part?

5 BURIL: Right.

6 CUTLER: Right. But there are a few standpipes  
7 where we may get a thousand gallons a year purge  
8 water that would have perchlorate in it.

9 BURIL: Okay. Well, we'll check that out and  
10 we'll get back to Jon and see what we can figure out  
11 on that one.

12 B.G., do you want to talk to us a little  
13 bit about how the vapor well and soil installations  
14 went and some of the results that you got?

15 RANDOLPH: We finished all that up before the  
16 last RPM meeting, had everything installed at that  
17 time. And, of course, we have sampled twice since  
18 then. We discussed the results a little bit. We're  
19 quite a bit higher than what we had in the previous  
20 portion of the investigation two and a half years  
21 ago, three years ago come August. Well, three years  
22 ago right now, I guess.

23 I got some information to hand out. It  
24 shows you the results. The last two pages are the  
25 preliminary results. We have not sat down and

1 really evaluated the data yet. This is all  
2 preliminary.

3 Then we have the various and sundry hits  
4 on the soil analyses in here, this package as well.  
5 And we did have some surprises.

6 BURIL: Yeah, we sure did. Some mind-blowing  
7 stuff.

8 ROBLES: Point them out.

9 RANDOLPH: The metals, no problem whatsoever.  
10 We did hit -- had a couple cyanide hits, which  
11 surprised me, in boring 29 and also in boring 30,  
12 Boring 29 is located right at the south end of the  
13 Edison substation. And I figured we'd have some bad  
14 stuff right there on top, but we didn't. Everything  
15 came up clean on the first several samples.

16 The major hit that we had was all in just  
17 about two samples that were obtained in test pit  
18 2 right at Building 103 in the upper foot and a  
19 half, where we ended up with some PAHs, a dioxin,  
20 and very, very small amount of PCBs.

21 BURIL: Pete, did we take that map that we had  
22 up here out, or is that still here?

23 ROBLES: Sure. I'll get it.

24 BURIL: Kind of indicate to James what we're  
25 talking about.

1 ROBLES: Okay.

2 BURIL: So that one at Building 103 test pit  
3 gave us a little bit of a surprise. You're not  
4 expecting to find the materials that we did, even  
5 though they're low --

6 RANDOLPH: Low concentrations, right. But that  
7 is also -- you must consider there's a 24-inch or  
8 36-inch storm drain that empties right there in the  
9 hem of the 24.

10 BURIL: Yeah.

11 RANDOLPH: It drains --

12 BURIL: A very large part of the Lab, yeah.

13 RANDOLPH: -- the northeast portion of the Lab.  
14 And it's been there for 30-some odd years; 40 years.  
15 So there's quite a few things that could be -- just  
16 a part of the soil. It's all at a shallow depth.

17 BURIL: Yeah, which gives you reason to believe  
18 that it probably did come down with the storm water  
19 discharge at some point in time and just collected  
20 there.

21 RANDOLPH: Of course, there's also reports years  
22 ago, too, some hand disposal right there at that  
23 particular point. That was one of the original pits  
24 that was named in the -- way back in the PA as --

25 BURIL: Show us where they were, B.G., that test

1 pit number 2.

2 RANDOLPH: Right here. Here's Building 103.  
3 The storm drain comes down this way and empties out  
4 right here. And the test pit was right about here.

5 BURIL: This test pit was constructed using a  
6 backhoe and -- --

7 RANDOLPH: Just outside the base of the slope.

8 BURIL: That was constructed using a backhoe,  
9 and so forth?

10 RANDOLPH: Yes, it was.

11 I know there were concerns -- when Penny  
12 was still here about -- we had said something to the  
13 effect that we would take one sample at a depth of  
14 five feet and agreed to take an additional sample in  
15 fine-grained intervals up higher. I tried to get  
16 the fine grains as high as I could, and if there was  
17 any discoloration, I would take that sample as well.  
18 I ended up taking two samples in each pit, one at  
19 the bottom and one where I could see there was  
20 finer-grained material amongst all the boulders and  
21 cobbles. And that's where this sample came from.

22 BURIL: So there was a discolored, shallow  
23 material.

24 RANDOLPH: It really wasn't discolored. It was  
25 just darker than the rest because it was wet.

1 BURIL: Oh. Okay.

2 RANDOLPH: There was moisture there. There's  
3 always been moisture there. Any time there's any  
4 irrigation at all or any kind of runoff, it comes  
5 out that drain and is deposited. It's in a low spot  
6 anyway. And that's right where the equestrian trail  
7 is, so it collects water.

8 BURIL: Yeah. So it's right there very, very  
9 near the outfall of that big storm drain. So I  
10 guess we could draw at least a tentative conclusion  
11 that something might have been in that storm drain  
12 over the course of many years that we were doing the  
13 work here and ultimately ended up being deposited  
14 there. And maybe it might be in conjunction with  
15 what you mention on this -- that hand disposal as  
16 well.

17 It didn't appear to be extensive from what  
18 you saw in the pit, though, did it?

19 RANDOLPH: No, it did not.

20 BURIL: Okay.

21 BISHOP: We've got hits two of the PCBs, 200 and  
22 270.

23 RANDOLPH: Right. That's micrograms per  
24 kilogram. So it's ppb. The TLC value is 50  
25 milligrams per kilogram.

1 ROBLES: PPM.

2 RANDOLPH: PPM.

3 BURIL: So we're at an order of magnitude or  
4 more under that.

5 RANDOLPH: The very last page is just the only  
6 hit that we had on the 8270s. And it's kind of a  
7 surprise. You'll probably discover this, too, if  
8 you look at it. That particular sample or two  
9 samples, one was in the test pit, test pit 2 in that  
10 shallow sample, those compounds are not picked up in  
11 the 8310s, which is a much more sensitive analysis.

12 BURIL: Really.

13 GEBERT: Excuse me. Were those taken from the  
14 same location?

15 RANDOLPH: The same sample.

16 GEBERT: The same sample?

17 RANDOLPH: Same sample. Of course, for all the  
18 analyses that we had, we had to get a large enough  
19 sample so it ended up being the equivalent of two  
20 2 1/2 by 6 inch stainless steel sleeves.

21 So again, that tells me what we found is  
22 not very extensive.

23 BURIL: Now, the PAHs by 8310, you say that the  
24 other method was used was 8270?

25 RANDOLPH: 8270 and 8310.



1 BURIL: And the two methods did not pick up the  
2 same materials.

3 RANDOLPH: Exactly.

4 BURIL: 8310 is a high pressure performance  
5 liquid chromatography, isn't it?

6 RANDOLPH: Yes, it is.

7 BURIL: Okay. So that should be a much more  
8 sensitive test, the GCMS.

9 RANDOLPH: Oh, it is. The detection limits are  
10 down around 5 or 6, depending upon moisture content,  
11 whereas for the 8270 it's up anywhere from 350 to  
12 750.

13 BURIL: Bizarre.

14 RANDOLPH: And the results that they reported  
15 were all, except the one sample not from the test  
16 pit, estimated because they were detected at below  
17 the detection limit. In other words, the specified  
18 reporting limit.

19 BISHOP: It's not all that surprising. As you  
20 know, soil samples are not the same sample. They  
21 have totally different results.

22 BURIL: Yeah.

23 RANDOLPH: Yeah.

24 BURIL: Okay. Any questions or comments on the  
25 soil data that we have? I want to touch briefly on

1 the soil vapor information that we have on here as  
2 well.

3 RANDOLPH: None of this data has been validated.

4 BURIL: Yeah. It's all unvalidated data. Let's  
5 be sure you know that.

6 BISHOP: I'm going to need to talk to some folks  
7 about PCBs because I'm not real familiar with it,  
8 what that means.

9 RANDOLPH: I talked to our chemist who has been  
10 working with dioxins and PCBs in Times Beach and  
11 back in New Jersey, and he thought that was really  
12 nothing to worry about, says it's very, very low.  
13 In fact, some places that's cleanup level, or above  
14 cleanup level or -- excuse me, below cleanup level.

15 BISHOP: Right.

16 RANDOLPH: And especially the dioxin, when I  
17 told him that one, because that one I don't know a  
18 thing about it, and he says, "Hey, that's a good  
19 background level."

20 BURIL: I've had some experience with dioxins  
21 when I worked at a poultry treating plant site up in  
22 Central Valley. And we're fortunate that it's the  
23 octachlorodioxin as opposed to any of the others,  
24 particularly petrochlorodioxin.

25 The one that they show here is the one

1 that has the least toxicity. In fact, I've heard  
2 years ago it was called almost as dangerous as sand.  
3 So it's not very toxic, at least based on some data  
4 that I had from a few years ago. I don't know if  
5 there's anything out there now that has contradicted  
6 that. But at least it's not the  
7 2,3,7,8-tetrachloro. That's the one that's the  
8 nightmare.

9 Now, these could easily be something from,  
10 again, runoff from herbicides or pesticides that  
11 have been used here at the site, or maybe even  
12 outside of JPL over the years. Very easily could be  
13 something of that nature.

14 I can't for the life of me think of a  
15 process here on the Laboratory over the course of  
16 time that would have generated a dioxin-like waste.  
17 We've never seen anything like this before.

18 GEBERT: Usually they come from combustion,  
19 PCBs --

20 BURIL: Right.

21 GEBERT: -- or other chlorinated materials,  
22 which --

23 BURIL: Which I can't imagine we would have.

24 GEBERT: -- powered the rocket engines or  
25 something.

1       BURIL: That's possible, but usually those kind  
2 of things could be in incredibly small quantities  
3 because the asphaltic binders that were used way  
4 back then are just basically that, they were  
5 asphalt. They didn't have a lot of chlorinated  
6 materials in them.

7               I don't know. It doesn't add up. One  
8 sample that showed it for the course of time that  
9 we've been looking for these things doesn't give me  
10 a whole lot of reason to be real concerned, but  
11 certainly it's something to be aware of. Depending  
12 upon what you folks think might need to be done, we  
13 may have to take a second look at it.

14              We'll let you figure it out. You know,  
15 take time to figure it out, not, apparently, today.

16              B.G., do you want to talk just a little  
17 bit about the soil vapor results that you've got  
18 here on the last two pages?

19       RANDOLPH: I know that there was some  
20 speculation that when we drilled those other three  
21 holes around the old hot spot, which is boring 16,  
22 that we -- a very good chance that we would be out  
23 of the zone that we'd find anything and it would  
24 only be more or less a zero limitation.

25              Well, as you can take a look at the

1 result, you can find that all three holes are about  
2 as hot as the old B 16 was in the deep end, which is  
3 boring 25. That's the --

4 BURIL: Why don't you show us on the map where  
5 the individual borings are.

6 RANDOLPH: Okay. Boring 25 is right here at the  
7 old B 16, right up here on Aero Road.

8 Boring 26 is located down here close to  
9 the corner of Building 79.

10 27 is up here in the parking lot, up close  
11 to MW-7, right over here in the corner.

12 And 28 is down here right in front of the  
13 southwest corner of Building 18.

14 We have a pretty good sized area that  
15 we're dealing with. These grids are 500 by 600  
16 feet. So you can see where -- over 300 feet between  
17 26 and 28 and maybe 250 feet to 27 up here.

18 That's a pretty good size area. You can  
19 see the results are all comparably the same even  
20 though the values do jump around between the two  
21 readings, two sets of readings. But it's still a  
22 warm area.

23 I don't think -- we certainly haven't  
24 limited it, by any means.

25 BURIL: It appears to be for what I'll term not

1 constant, but a fairly consistent concentration in  
2 the hundreds once you get down below about 60 feet.

3 RANDOLPH: There seems to be kind of an increase  
4 in concentrations about halfway down through the  
5 depth of the hole, three of them, and then in 27 it  
6 does get considerably higher again right above  
7 groundwater.

8 All these holes were drilled to  
9 groundwater and backfilled to two feet before we set  
10 the first probe. Backfilled them with bentonite,  
11 then set the sand.

12 Groundwater has since dropped some more  
13 since we drilled these holes. And of course,  
14 groundwater came up about 30 feet to 40 feet above  
15 where we thought we were going to bottom out anyway.

16 BURIL: Yes.

17 RANDOLPH: So even if we had set them that deep  
18 and the groundwater came up, we would have swamped  
19 them, we wouldn't have been able to get anything out  
20 of them anyway.

21 BURIL: With the weather predictions such as  
22 they are for this winter, I'm sure the water table  
23 is going to come back up again.

24 RANDOLPH: More than likely.

25 BISHOP: So 25 is a replacement. 26, 27 and

1 then 28 are the three outside ones?

2 RANDOLPH: Right.

3 BISHOP: Then 29, 30 and 31 are --

4 RANDOLPH: Those are the soil borings that we  
5 put in down by the parking lot, down by --

6 BURIL: Do you want to show us where that is,  
7 B.G.?

8 RANDOLPH: Yes. 29 is right here on the apron  
9 to the recycling facility, right down here, where  
10 that facility, old reported drainage came right out  
11 through the southernmost tip of the property at that  
12 time.

13 And 30 is up here in that EPA WP 4 that  
14 they identified as a potential pit. And we did find  
15 that there was some material that had been buried  
16 and burned at that particular point. That's 30.

17 And 31 is down here where the other pit  
18 was reported.

19 BISHOP: Okay.

20 RANDOLPH: And we absolutely found nothing in  
21 that one. Just plain old dirt.

22 BURIL: So basically, then, the areas around the  
23 hot spot still show that they're still hot,  
24 basically.

25 RANDOLPH: Yes. High in carbon.

1 BURIL: We didn't have a lot of TCE vapor, it  
2 looks like. Very low.

3 RANDOLPH: No. It was relatively low during the  
4 first 24 borings that we put in.

5 BURIL: Have we found Freon 113 in the past  
6 there, B.G.

7 RANDOLPH: Yes, we have.

8 BURIL: Okay.

9 RANDOLPH: Freon 13, when we did the very first  
10 probes, Freon 13 was not required by the Water  
11 Quality Board at that time as a reporting element.  
12 And from the time we put in the probes and the other  
13 soil vapors, it became a requirement, so we reported  
14 it at that time.

15 BURIL: Yeah. Okay.

16 RANDOLPH: And oddly enough, a couple of zones,  
17 where if you look at this and it kind of makes you  
18 want to scratch your head for the Freon 11 and the  
19 1,1,1-TCA, that's found in three ports and that was  
20 it. And they're all in separate wells. There's  
21 only one hit.

22 It repeated itself three weeks later,  
23 so --

24 BISHOP: That's a --

25 RANDOLPH: It's very strange. I mean, we only



1 had one plugged port, and that was number 7, screen  
2 number 7 on sampling port number 7 on boring 28. It  
3 was plugged. It tested out fine when we installed  
4 it, but when we went to sample it, it was plugged.

5 BURIL: Assuming the number you put in, that's  
6 not too bad a ratio.

7 B.G., did you see anything in the soil  
8 borings themselves, the cuttings and the boring logs  
9 or anything that would indicate why we would see the  
10 slight increase in the center of the boring --

11 RANDOLPH: No.

12 BURIL: -- as opposed to anywhere else?

13 RANDOLPH: No.

14 BURIL: No finer grain materials, anything like  
15 that?

16 RANDOLPH: It did down around 168 feet in boring  
17 28 and about 175 to 180, in that neighborhood, in  
18 each of the other wells. It looked like the soil  
19 had been stressed. In fact, even in boring 27, had  
20 some very funny deposition, very fine grain  
21 materials had been squeezed, looked like it had been  
22 squeezed to maybe fractured soil.

23 BURIL: Really. Okay.

24 How would you classify the soils,  
25 generally, that you were encountering in these spot

1 holes?

2 RANDOLPH: Silty sands, clean sands, gravelly  
3 sands.

4 BURIL: Okay.

5 RANDOLPH: There were some little stringers that  
6 were maybe a foot or so thick that you'd run into  
7 occasionally that might be a sandy silt.

8 BURIL: And these were installed with the sonic  
9 system, too?

10 RANDOLPH: Yes, they were. Yeah. So we could  
11 see every foot of core that came out.

12 BISHOP: It sounds like they were pretty  
13 amenable to soil vapor extraction and that kind of  
14 a --

15 BURIL: You read my mind.

16 Okay. Any questions on the data that  
17 you've got there? I know you haven't had a chance  
18 to digest it much, but --

19 BISHOP: I think I just have one -- well, a  
20 couple of comments.

21 It looks pretty consistent down the  
22 groundwater that -- essentially. I think we found  
23 the area that's the likely source for that carbon  
24 tetrachloride that we were looking for.

25 BURIL: I'd agree with you.

1       BISHOP: It also looks like it's somewhere in  
2 that general area, but we may not even be on it yet.  
3 These are all essentially the same.

4       BURIL: Yeah. It's hard to tell. I'm debating  
5 in my own mind whether there's more characterization  
6 that's needed or whether going to characterization  
7 and interim remediation might be appropriate. With  
8 the longevity that this stuff has had in the ground,  
9 it doesn't surprise me to see it consistent, because  
10 it's had a while to spread out, equilibrate, and so  
11 forth. But whether it's a much, much larger area or  
12 just on the fringes of it right now, I guess we  
13 really don't know.

14               We can take some indication from the fact  
15 that our wells that are -- was that MW-8 there,  
16 B.G., next to Building 300?

17       RANDOLPH: Yes.

18       BURIL: Mark, correct me if I'm wrong, if you  
19 remember --

20       RANDOLPH: Excuse me. That's MW-12 by Building  
21 300. 8 is up by 303.

22       BURIL: 303. I'm sorry. My glasses aren't  
23 working today.

24               That well typically doesn't show us any  
25 high concentrations of carbon tet, does it?

1 CUTLER: 12? Not super high. The highest  
2 concentrations -- the dirtiest well on site is Well  
3 16.

4 BURIL: For carbon tet?

5 CUTLER: For carbon tet, PCE and perchlorate.  
6 It's up here. It's kind of taken over. Well 7, the  
7 levels of carbon tet in Well 7 have slowly gone down  
8 in the last couple years. So this seems to be the  
9 most contaminated bit of groundwater is right here.

10 BURIL: B.G., do we have any vapor wells in that  
11 immediate area?

12 RANDOLPH: We have 8, which is up above it in  
13 this parking area right here, and which we  
14 essentially didn't find much at all. Just a trace.

15 BURIL: How far did that one go down? Do you  
16 recall?

17 RANDOLPH: I recall that one went 97 feet, 95  
18 feet.

19 BURIL: So you would have been down in the  
20 region where you probably should have been picking  
21 something up based on these data.

22 RANDOLPH: I should have brought the other data  
23 with me, the old data. I didn't.

24 Let's see. Then I guess the next closest  
25 ones that we had are over here, but they're

1 relatively shallow because of rock.

2 BURIL: Those are suspected to be above the  
3 fault, too, weren't they?

4 RANDOLPH: Yeah. 67 we got down to 100 feet,  
5 right down here in the front of 67.

6 16.

7 That's basically it. We really don't have  
8 anything between here.

9 BURIL: What I was trying to allude to is to  
10 look at the groundwater concentrations for carbon  
11 tet as an indicator whether we had, you know, other  
12 potential sources.

13 7 has been the classic one to consider the  
14 most contaminated for carbon tet. And so finding it  
15 in the immediate area there makes perfect sense.

16 16 showing up with more carbon tet may be  
17 a seasonal feature that heretofore we hadn't  
18 identified. I don't know. But certainly it's the  
19 highest one for perchlorate and for TCE. So there  
20 may be some additional concern out there, but  
21 exactly where it's specifically at, we don't know.

22 BISHOP: Were you able to identify, probably in  
23 the area of 16, a disposal pit?

24 BURIL: I'm trying to recall. That one where  
25 they talked about bulldozing and dumping.

1        RANDOLPH: Hand dumping.

2        BURIL: What did we call it? WP 1? Do you  
3 remember?

4        RANDOLPH: No. It would have been 3.

5        BURIL: 3. Okay.

6        RANDOLPH: And that was up there where we  
7 drilled boring 8, up in the parking lot.

8        BURIL: Do you want to show us that, B.G.

9        RANDOLPH: Yeah. That's right up here. Right  
10 up here.

11       BURIL: That's where we had a vapor well that  
12 showed essentially nothing.

13       RANDOLPH: Right. That went down close to 100  
14 feet.

15       BURIL: Which at the time would have been close  
16 to groundwater or --

17       RANDOLPH: No.

18       GEBERT: So you haven't been able to tie this  
19 particular hot spot with any historical source, any  
20 seepage pit there?

21       BURIL: Nothing specific, no. It's just the  
22 general use in the area around MW-7. That was the  
23 old wind tunnel area in the olden days, as I recall,  
24 or near it.

25       GEBERT: Yes.

1 BURIL: And they used quite a bit of stuff in  
2 the wind tunnel area, I know.

3 But as far as specific locations that we  
4 found so far, the only one that gave us an  
5 indication that there was a hot spot, so to speak,  
6 was the boring 16, and that's what prompted us to  
7 put in the additional three.

8 RANDOLPH: This is the old wind tunnel area  
9 right here. And these two seepage pits right here  
10 were tied in with those wind tunnels.

11 BURIL: Right.

12 RANDOLPH: And this is where we had the hot hole  
13 to begin with. And that was the reason for putting  
14 that hole in there. That was where old boring 16  
15 is.

16 But this area up in here was supposedly  
17 the area that was reported in a memo that some  
18 hand-dug pits were used to dispose of some material.

19 ROBLES: Chuck, then is the issue do we have  
20 enough information to do an interim?

21 BURIL: Well, I don't know that we don't have  
22 enough information. I mean, certainly we've got  
23 enough, in my opinion, to warrant giving strong  
24 consideration to an interim soil vapor extraction in  
25 the area of MW-7. I mean, we're looking at

1 something here that given the soil types that B.G.  
2 is describing and just doing the back-of-my-mind  
3 calculation based on the new method that the  
4 Regional Board has out for determining how clean  
5 soil needs to be, given soil type proximity,  
6 chemical type and so forth, I can't see that this  
7 would pass the test, so to speak. I think this  
8 probably would be one that would catch us as far as  
9 a remediation issue.

10 BISHOP: It's pretty apparent when you look  
11 at -- you've got 20 to 200, depending on whose level  
12 you're using, essentially at the water table.

13 BURIL: Yes.

14 BISHOP: And it's essentially the method that we  
15 use if you have it at the --

16 BURIL: Water that you're going to clean up,  
17 yeah.

18 CHANG: How far down is the water table?

19 BISHOP: About 200 feet.

20 CHANG: 200 feet.

21 ROBLES: I think we should push to do that, to  
22 try to -- and then --

23 BURIL: I think it's reasonable to start talking  
24 about it in earnest, yeah, now that we have this  
25 data. I think we are in a position of doing



1 ourselves a favor in trying to -- (COULDN'T/CAN'T  
2 HEAR)

3 ROBLES: At the same time, if we want to, is  
4 continue the characterization out. But I think --

5 BURIL: Yeah. I guess it's a question of  
6 timing, in my own mind, at this point. Personally,  
7 I don't see the need to stop on the interim remedial  
8 action in lieu of further characterization. I think  
9 we've identified a fairly large area there that  
10 carries enough material at that significant depth  
11 that it wouldn't hurt us to try and figure out how  
12 to remediate that stuff right now.

13 I guess the thing that kind of sticks in  
14 my mind are those groundwater fluctuations that we  
15 have. And given -- we saw it rise 40 feet, now it's  
16 dropped back down. We've seen rises as much as 90  
17 feet in some wells and wondering with this weather  
18 forecast that people are saying we're going to get  
19 40 inches of rain, possibly, this year, how we would  
20 construct a system to deal with that kind of  
21 dynamic.

22 I don't know if you fellows have seen that  
23 kind of thing in the past, Jon, where you've had to  
24 do that or --

25 BISHOP: The nice thing about a vapor system and

1 when you've got soil like this is it's going to  
2 produce a large spherical area of influx. You don't  
3 have to put your wells down near the groundwater.  
4 You can actually put them up quite a ways and change  
5 your pull on your vacuum depending on -- you don't  
6 want to pull it when the water comes up. You want  
7 to reduce it a little bit so you don't pull so much  
8 moisture in.

9 BURIL: You can manage it like that.

10 BISHOP: It depends on if you've got stringers  
11 in there you may -- or you've got, you know,  
12 competent fine grain, you may have to, then, deal  
13 with -- those blocked your vapor and where do you  
14 want to place your things.

15 BURIL: Yes.

16 BISHOP: Sounds like in general that you've got  
17 a pretty uniform, you know, or --

18 RANDOLPH: There are some variances in it, of  
19 course, but it's not like going from one formation  
20 to another.

21 BURIL: It's not like there's a very distinct  
22 horizon where you went from a sand to a clay and it  
23 stayed that way for tens of feet or something.

24 RANDOLPH: No, sir. Not at all.

25 BURIL: Okay. Well, I think it's probably

1 worthwhile that we start to look at it and figure  
2 out how we approach this.

3 GEBERT: For me it's pretty obvious that you're  
4 going to have to do some soil vapor extraction. But  
5 also looking at preliminary -- the data, it looks  
6 like you probably have to do some more  
7 characterization, too, of the vapor --

8 BURIL: That's another possibility. I'm not  
9 really convinced.

10 GEBERT: I don't think you really have your  
11 hands around it totally yet --

12 BURIL: Yeah, I agree with that.

13 GEBERT: -- which I think you would need to do  
14 prior to starting the system up. It's important to  
15 know what you're dealing with at first so after it's  
16 done, when you go back, you can look at the same  
17 vapor probe locations and --

18 BURIL: Yeah.

19 GEBERT: -- say "Here's the difference before  
20 and after. Yeah, we got it."

21 BURIL: I'm almost wondering, just in throwing  
22 concepts around the table here a little bit, if we  
23 did things maybe simultaneously as opposed to  
24 sequentially.

25 ROBLES: That's what I'm thinking of, that we

1 could start planning and --

2 BURIL: That if we go ahead and we install a  
3 soil vapor extraction system in the area that we  
4 know to be bad --

5 GEBERT: Yes.

6 BURIL: -- around MW-7 and boring 16.

7 ROBLES: -- the rate of expansion to the areas  
8 to be able to be flexible --

9 BURIL: Then as we characterize --

10 GEBERT: Right.

11 BURIL: -- we understand, we can install another  
12 system.

13 GEBERT: Right. You know the area that you have  
14 to deal with now --

15 BURIL: Right.

16 GEBERT: -- if you have to have more wells  
17 later, that is easily done.

18 BURIL: That's kind of what I'm thinking, is  
19 that we may be in a position of wanting to just  
20 start with what we've got and understand, at least  
21 in the one area, and then move on from that and  
22 characterize maybe some more off in the other areas  
23 to try to understand what we're dealing with in  
24 terms of the real extent. And, you know, we might  
25 end up having a rotating system that goes from spot

1 to spot to spot over time or multiple systems, or  
2 who knows.

3 ROBLES: I'd like to see something done so that  
4 at least we can tell we're doing something.

5 GEBERT: Right.

6 BURIL: And we aren't going to suck any  
7 perchlorate out of the ground this way, so --

8 BISHOP: I don't think you have to wait until  
9 you have it fully characterized --

10 GEBERT: No, not at all.

11 BISHOP: -- to start working. But it's true  
12 that you want to find more out. I'd agree with  
13 Richard that with the way the data is so consistent  
14 that it may be that you've got to double that area  
15 or it may be that that's just the higher area in the  
16 rock.

17 BURIL: Yeah, I think that may be true. Data  
18 certainly indicate to me that we've got small  
19 characterization that we can begin some form of  
20 remediation here, at least determining the  
21 feasibility. And exactly how we do that, I don't  
22 know. But doing some tests on the extractability of  
23 the soil and so forth. Everything B.G. just said  
24 gives me reason to believe that it should work well.

25 GEBERT: From my experience on other sites,

1    yeah, it should work well.    Should work well.    In  
2    sandy soils without any clay layers to interfere  
3    with the flow of the vapors.

4            BURIL:    Have you folks had experience with  
5    carbon tet on other sites that you have knowledge,  
6    aside from GAC?    Do you have knowledge of any other  
7    types of treatments that would work well in this  
8    situation?

9            BISHOP:    The other -- and I think it might be a  
10    little -- the levels might be a little low for this.  
11    The other method that I've seen used a lot lately is  
12    condensing, so you pull it out and condense it and  
13    then you recycle the solvent --

14           BURIL:    Really?

15           BISHOP:    -- itself.    That's got two advantages.  
16    One is you can recycle the solvent.

17           BURIL:    Want to use carbon tet, yes.

18           BISHOP:    Well, you're not just doing that  
19    regardless.

20                      Two, you've got a real good, accurate  
21    amount of level of what you're taking out of the  
22    ground.

23           BURIL:    That's helpful, yes.

24           BISHOP:    It's not so much -- since you don't  
25    know -- have a release volume, it's not as --

1 BURIL: Yes.

2 BISHOP: -- critical. But --

3 BURIL: What kind of a condensing system are we  
4 talking about? Can you describe it a little more as  
5 far as --

6 BISHOP: You know, I can't tell you exactly.  
7 It's essentially a refrigeration condenser. You  
8 take the air flow through and condense out the  
9 solvents.

10 BURIL: Have you seen anything as far as -- you  
11 know, these are -- for condensations that I'm a  
12 little familiar with them. For a condensation  
13 system are these levels that you've seen work  
14 successfully for that type of system?

15 BISHOP: I have to go back and look. The cases  
16 I've seen I think were higher.

17 BURIL: I would expect so. Probably by an order  
18 of magnitude.

19 BISHOP: Yeah, maybe. So it may not be --

20 BURIL: Yeah. Well, it would be useful  
21 information if you could find that out for us.

22 RANDOLPH: These results now, too, remember, are  
23 in micrograms --

24 BURIL: Per liter.

25 RANDOLPH: -- per liter of vapor. And the

1 equivalent of about, say, 500 is equal to around  
2 either 80 or 90 parts per million.

3 BURIL: When you do all the conversions. Yes.

4 ROBLES: I think we've got the concentrations  
5 enough to use some type of --

6 BURIL: Yeah. I was just looking for -- these  
7 folks have got the experience of other locations of  
8 different types of treatment aside from -- the most  
9 obvious to me is granule-activated carbon.

10 NIOU: For this level most people use TAC.

11 BURIL: Yes. That's a pretty standard way of  
12 looking at it. That's what we use over at the  
13 treatment plant in Pasadena.

14 Okay. They're pretty easy to get hold of,  
15 too. Get the modulars to bring around.

16 NIOU: Are you going to approach this as a  
17 turbidity study or --

18 BURIL: Well, that's one of the things I'm  
19 debating: How we should approach this. I know one  
20 of the things I personally would like to know is  
21 what the zone of influence would be at various  
22 vacuum rates. We can, say, install a well or a  
23 vacuum system just, you know, hypothetically there  
24 at boring 16 and put a vacuum on it. I don't know  
25 if we'll be able to use the probes that we have in



1 the ground now to try and measure if we see any  
2 difference in terms of inches of water vacuum that's  
3 produced at those locations. But I'd like to know  
4 what we're talking about in terms of a zone of  
5 influence with one of these things and just how hard  
6 we've got to pull on it. You know, you drop this at  
7 30 inches of mercury or something like that and pull  
8 one of these things, my God --

9 GEBERT: You know, you would need to run a pilot  
10 test for sure before you can even design the system.

11 BURIL: That's what I'm thinking, is to try to  
12 come up with a means like that. I've run systems  
13 that vacuum somewhere in the neighborhood of about  
14 28 inches of mercury, which is unreal. And we had  
15 all these clay soils, but -- and it didn't work real  
16 well. So I'd be interested to see what we could get  
17 before we actually throw a full-blown system into  
18 this thing and then try to make it work as opposed  
19 to design it to work.

20 BISHOP: Most of the systems I've seen are  
21 multiple wells.

22 BURIL: You may have more than one, yeah.

23 BISHOP: And then you can regulate the --

24 BURIL: Flow

25 BISHOP: -- flow on different wells. You can

1 change your area so you cover the area that you  
2 need to.

3 BURIL: Yeah.

4 BISHOP: That's what we're going to be doing,  
5 the way I'm looking at it, maybe not for the initial  
6 system where you're going in just to start  
7 extraction while you do further characterization,  
8 but the end result is --

9 BURIL: End result would probably be a multiple  
10 well.

11 BISHOP: To get coverage of the area that we  
12 know is contaminated.

13 BURIL: In your experiences what kind of flow  
14 rates are generally needed for this type of soil and  
15 this type of --

16 BURIL: I don't know what the flow rates are off  
17 the top of my head.

18 GEBERT: We can find out.

19 BURIL: I just recall in my own experience in  
20 gasoline stations that we would have flow rates  
21 anywhere from 600 to 1,000 cfm for large areas like  
22 that.

23 GEBERT: I've seen them lower than that.

24 NIOU: Multiple wells?

25 BURIL: I would have five wells on this one site

1 I remember.

2 NIOU: Total?

3 BURIL: Five wells total, each pulling about  
4 between 300 to 180 cfm. And we were up over 1,000.

5 NIOU: Because this is pretty sandy, right?  
6 So -- and also you have deeper groundwater. Probably  
7 each well you may get more.

8 BURIL: Depending how we construct them, yes.

9 All right. Well, that's all the stuff we  
10 can find out if we run a feasibility test and see  
11 how well it works.

12 CUTLER: How would this work administratively?  
13 Being an interim remedial action, there's not a lot  
14 of formal -- you can pretty much --

15 BURIL: I love this guy. He is such a straight  
16 man. He went right to the question.

17 CUTLER: Pretty much a proposal that of course  
18 gets approved here and then the agencies approve and  
19 you can go. It's not a --

20 BURIL: Well, that was my next question, is in  
21 terms of a formal way of -- I think this meeting is  
22 one way of documenting the fact that we're going to  
23 start talking about going in and looking at this and  
24 probably develop a plan and whatever else.

25 What is it that would be the accepted

1 formal process, you know, you develop a plan, have  
2 it reviewed by you folks?

3 GEBERT: Exactly, yeah. You know, write up a  
4 report.

5 BURIL: Do it and then talk about the results --

6 GEBERT: Right.

7 BURIL: -- and then talk about scaling up from  
8 whatever that scale is up to whatever size you want  
9 to do. That would be the general approach?

10 GEBERT: Make the proposal in the workplan and  
11 then --

12 BURIL: Okay.

13 GEBERT: Submit it to us.

14 ROBLES: I would like to, before a formal plan  
15 is submitted, discuss it over teleconference.

16 BURIL: Or in a face-to-face.

17 ROBLES: So we get a concept discussion and then  
18 we can talk to get your inputs. Because to find a  
19 formalized plan and then come back and redo it, at  
20 least we get the major issues out of the way, what  
21 we're just doing is fine tuning. Fine tuning itself  
22 would be perfect.

23 CHANG: Yeah. It always works better anyway  
24 with some front end inputs from the agencies.

25 NIOU: And also, this won't be a primary

1 document for this workplan.

2 BURIL: That was a question I had.

3 NIOU: It's not a feasibility study. It's only  
4 secondary.

5 BURIL: It is a secondary document?

6 NIOU: So for you, you have your own freedom to  
7 choose the system and design one you go back to.

8 BURIL: It's ultimately going to be a primary  
9 document, so we want to be sure we put you --

10 ROBLES: The reason I wanted to get this is I  
11 think we're in a unique situation with the wet  
12 season coming to be able to get a lot of bang for  
13 the buck through the vapor extraction. I think in a  
14 sense the contamination is going to be put into the  
15 vapor and after we get a dry season again, we have a  
16 tremendous opportunity to draw a lot of that  
17 contamination right out of the vapor. Because this  
18 is going to be one of the wettest seasons we've ever  
19 had.

20 GEBERT: That's what I keep hearing.

21 ROBLES: I know.

22 BURIL: If their predictions come true. But I'm  
23 watching the way the weather is now with this  
24 humidity and high heat and thunder storms and so  
25 forth. I think their prophecy may actually be

1 self-fulfilling.

2 ROBLES: Well, the oldtimers up in the desert  
3 say that the rain cycle is expected every 7 to 8  
4 years. This one, all the oldtimers are saying is  
5 going to be big. We're expecting floods up there.  
6 We're expecting flooding, major flooding in the  
7 whole Antelope Valley area.

8 BISHOP: So just don't plan to have any meetings  
9 during spring.

10 ROBLES: Unless you bring your boat.

11 BURIL: We can put you out on the Arroyo, Jon.  
12 Probably just be Class 4 all by itself.

13 Okay.

14 BISHOP: Yeah, I think that's a good approach.  
15 Let's try and move on it as fast as we can and  
16 we'll --

17 BURIL: Yeah. In fact --

18 GEBERT: I have a question. Would there be any  
19 contract delay problems?

20 BURIL: I don't think so. I think the one in  
21 particular we're doing right now is for advanced  
22 funding, the contract. I'm hopeful that that will  
23 be going through there in the next week or two. And  
24 that's to the tune of a million bucks with some work  
25 built in there for perchlorate. You know, we may

1 shift a little of the approach around a little, but  
2 I don't anticipate this being an immediate concern.  
3 I think we should be able to move out in relatively  
4 short order. I've got to sit and talk to these guys  
5 first for a little while to find out what exactly  
6 we should be doing and how much it's going to cost.  
7 But when it comes to contract delays, I can't  
8 anticipate any right this second.

9 ROBLES: They got a lot of free time.

10 NIOU: If they do -- if they construct a well  
11 and start doing a pilot test before the workplan  
12 finalized, is there any way that they can still  
13 follow the Superfund process?

14 CHANG: I think as long as they -- as long as  
15 what they're planning on doing is going to be  
16 documented in the workplan, there shouldn't be any  
17 problems.

18 BURIL: I think we can cross that bridge when we  
19 get to it, too. I mean, I think what we're talking  
20 about here is kind of standard stuff. There's not a  
21 lot of mystery to it.

22 CHANG: Yeah. Right.

23 BURIL: Another whole series of fun, B.G.

24 CHANG: Yeah. I certainly am sensitive to the  
25 idea of doing some action in tandem with RI, RI

1 studies. It looks like you've already identified  
2 the major -- the major source here and you know you  
3 can go ahead and do some quick -- quick remedial  
4 action, so -- the sooner they get extracted I think  
5 the easier the cleanup will be in the future. The  
6 longer you leave the stuff in the ground the more  
7 complicated cleanup becomes later on.

8 BURIL: Yeah. Okay. I don't know just, you  
9 know, without going into concerns of details now,  
10 I'd like to figure out schedule and things of that  
11 nature, schedule impacts and things like that down  
12 the road. Off the top of my head I can't see why  
13 this can't go concurrently with all the rest of the  
14 things. I think moving along in a parallel track  
15 should work. If you folks have had experienced that  
16 would tell you otherwise --

17 CHANG: We do that all the time. One of the big  
18 sites is McClelland. We've got SUE systems all over  
19 the place in tandem with the RI.

20 BURIL: All right. Good.

21 Okay. Well, this is going to get  
22 interesting. Actually getting into the realm that I  
23 have a little expertise in.

24 Okay. That pretty well carries us through  
25 number 1. Are there any other questions or comments



1 that you folks would like to get on the table before  
2 we move on?

3 NIOU: Just one question for Mark. Remember  
4 last meeting you gave us those figures for puzzles  
5 to meet them together well by well, the groundwater?

6 CUTLER: Maybe some contour maps?

7 NIOU: Contour maps.

8 CUTLER: Right.

9 NIOU: Plus the well water levels jumping up and  
10 down to see which section, which level connect with  
11 the other ones. It's a puzzle. I still couldn't  
12 solve it.

13 But on the other hand, I have a question.  
14 For those wells, with some of the wells has two or  
15 three almost the same identical water level and it  
16 changes. I was just wondering, are the COC,  
17 chemical of concerns, the concentration are similar  
18 in those sections?

19 CUTLER: That's another puzzle. Sometimes  
20 they're similar, sometimes they're not. There  
21 doesn't seem to be a real obvious pattern yet.

22 It is -- there are so many things going on  
23 with flow reversals, with these pumps, different  
24 screen intervals in the production wells, the pumps  
25 at different intervals in the different production

1 wells. It's really a kind of a maze. So I would  
2 say right now, no.

3 NIOU: Okay

4 CUTLER: Don't know.

5 NIOU: So even though hydraulic connected,  
6 but --

7 CUTLER: Right.

8 NIOU: -- chemical concentration.

9 CUTLER: Right. And it seems to be more related  
10 to where the screen interval and where the pump is  
11 located in these production wells. You'll have two  
12 screens that behave very similar hydraulically.  
13 Water levels always track so they're in the same  
14 layer. You know, we split the aquifer up in layers,  
15 so we put those two in the same layer. But  
16 contaminants may show up in this bottom screen  
17 because the nearby production well, its pump is  
18 right here.

19 NIOU: Oh, okay.

20 CUTLER: And so even though they behave the same  
21 way hydraulically, the obvious conclusion is, well,  
22 things are going toward this pump and they're coming  
23 through that screened interval. That's all we can  
24 really think, say right now. That seems to be  
25 overriding driving is where the pumps are.

1        NIOU: I was wondering about that, because I  
2        can't make any correlation.

3        CUTLER: No. We kind of try to drive ourselves  
4        crazy trying to find something. We haven't.

5        NIOU: Thanks.

6        CHANG: Chuck, before we go on, I left two  
7        messages with Kathy that our community reps are in  
8        the area this week.

9        BURIL: Oh. Okay.

10       CHANG: And I told her that if they were  
11       available they could come in and give us a 15-minute  
12       pitch on how to get a RAB started. I thought that  
13       would be real helpful for you, for you guys.

14       BURIL: Okay. Well, we can talk about that.  
15       Put a number 3 in a little bit. I think we had some  
16       thoughts about how we'd like to set that up as well.  
17       So we can talk about that in a little bit.

18                All right. Number 2, the ATSDR.

19        CUTLER: Could we talk about tributyl tin  
20        briefly?

21        BURIL: Oh, yeah. Thanks, Mark.

22        CUTLER: Do you want to do it here or later?

23        BURIL: Well, let's do it now. That's fine.  
24        That's a reasonable thing.

25        CUTLER: Tributyl tin, we sampled it for four

1 quarters now, but not in all the wells that were  
2 asked for. Tributyl tin does not seem to be a  
3 problem. We detected it a couple times at 2 parts  
4 per trillion right at the detection limit. One time  
5 it was at 5 parts per trillion. The PRG for  
6 tributyl tin oxide is, I think, around 200, or  
7 2,000. It's way up there.

8 BURIL: It's an order of magnitude or 2  
9 difference.

10 CUTLER: It's an order of magnitude.

11 So I just asked Chuck if we could just  
12 bring this up and see if we've sampled enough,  
13 enough locations, maybe not, to drop tributyl tin as  
14 a --

15 ROBLES: Do you want to make copies of this?

16 CUTLER: That's all I have. If we could make  
17 copies.

18 ROBLES: Okay.

19 BURIL: Yeah, that would be good.

20 CUTLER: You guys had asked last time that we  
21 sample or we add Well 4 and Well 8 to the tributyl  
22 tin. Well 8, we inadvertently didn't collect a  
23 sample for tributyl tin. So that's just one well  
24 that you guys had asked that we sample but we didn't  
25 sample for. But we've sampled all the way around

1 four quarters.

2 BISHOP: Is that something we do later?

3 BURIL: Have we not sampled that 8 in all four  
4 quarters, or just one?

5 CUTLER: Well, there's only one quarter after  
6 they asked for it.

7 BURIL: Yes.

8 CUTLER: Only one quarter since that time and we  
9 missed it that one time.

10 BURIL: Oh, okay.

11 CUTLER: But from what we're finding all the  
12 other times we've sampled, we haven't really been  
13 finding anything. A few little hits right at the  
14 detection limit and with an action -- a PRG at  
15 around 200. I just thought we'd bring it up. Is  
16 this something that we can --

17 BISHOP: As I remember, the reason that we  
18 expanded it out was that we had two spots that we  
19 were going to sample for it, 12 and --

20 CUTLER: 13.

21 BISHOP: -- 13, and we had hits.

22 CUTLER: We had one hit in 12.

23 BISHOP: Right. So then we expanded out to see  
24 if that was the edge of something, and you've done  
25 that except for in 8. Right?

1 CUTLER: Right.

2 BISHOP: So my suggestion was that we sample 8  
3 and we drop the other ones off of there.

4 BURIL: Here's a summary of the result.

5 BISHOP: Because the idea was to just take a  
6 look at --

7 GEBERT: So we started with just 12?

8 CUTLER: We started with 12 --

9 GEBERT: And 13.

10 BURIL: Do you want to show us where 12 and all  
11 those are at, Mark?

12 CUTLER: Right. The central cooling tower where  
13 suspicion if it was around would be right here.

14 BURIL: Right there.

15 CUTLER: So what we did is Well 13, the one  
16 closest, and then one downgradient. So we  
17 sampled -- we sampled these, Well 13 for four times,  
18 and as you can see, nondetect Well 14. Well 12, the  
19 upper two screens we've sampled. One time there was  
20 no water in the upper screen, and the results are  
21 there.

22 Then we added basically Well 8 and the  
23 upper two screens of Well 4. We missed Well 8. And  
24 you can see we had a 2 part per trillion hit in the  
25 second screen of Well 4.

1           So that just the question is, since we're  
2 all together, have we sampled enough to give you  
3 guys a feeling that this is not a concern on the  
4 site, knowing what the PRGs are.

5           And later we have a few two detects. This  
6 first hit here at 5 parts per trillion we had a  
7 turbidity of about 50. I mean at 5 parts per  
8 trillion, we're talking at the lab maybe the  
9 turbidity did have some interference problems. So  
10 that's kind of a suspect number.

11           Just want to get your feeling on this if  
12 we can --

13       BURIL: Let me throw out a suggestion and maybe  
14 echo something that Jon just said.

15           It appears, at least from my perspective,  
16 that of the samples that we've taken so far doesn't  
17 appear to be an issue. But we did say that we would  
18 sample Well 8, and because we didn't sample it yet  
19 we should go ahead and in this next round sample it  
20 and verify that that is the last one that we would  
21 want to be sure this isn't a problem.

22           Based on what I'm seeing here, I don't  
23 think we have a problem at the other wells. So if  
24 we catch up with Well 8 in this next sampling round  
25 and it comes in as a low number of parts per

1 trillion like we're seeing here, essentially  
2 detection limit or nondetect, then I personally  
3 would feel very comfortable that we've done enough  
4 on this. I don't know how you folks would  
5 (COULDN'T/CAN'T HEAR.)

6 GEBERT: Yeah. I think we should sample. I'd  
7 like to see at least one sample at Well 8 because  
8 that was the one that -- in closest proximity to the  
9 12 where you had the hit and then look at all the  
10 data.

11 BURIL: Okay. Then in the next sample, then,  
12 all we would do is just do Well 8, but the other  
13 four we would just kind of sit back, say okay, we've  
14 got enough there. We just verify that 8 is not a  
15 problem?

16 GEBERT: Yes.

17 BISHOP: I don't have any problem with that.

18 GEBERT: Yes. That's fine.

19 BURIL: All right. Great. We'll go ahead and  
20 do that then, Mark.

21 CUTLER: Okay. Okay.

22 BURIL: Mark, your point of turbidity, there's  
23 one thing I think we should probably mention. What  
24 well was it at the bottom of the screen that we were  
25 having turbidity problems?



1 CUTLER: Oh, yes. That's a good point.

2 We should make you guys aware, in one of  
3 our new West Bay wells, Well 23 down by Chuck's  
4 office, you know, we split the aquifer up into  
5 layers. To avoid having a data gap in one of our  
6 deeper layers, we went ahead and put a screen in a  
7 very crummy sand, very dirty sand. Knowing that  
8 well development could be a problem, but we didn't  
9 want to be, you know, well, you might have a data  
10 gap, how do you know what's down in this bottom  
11 layer.

12 So we went ahead and did it. And sure  
13 enough, during our development, these guys -- we  
14 pumped on it for over a week through the 4 inch  
15 before the West Bay was installed and could only get  
16 it down to 80 NTUs. Now, we haven't gone back with  
17 the West Bay development, but that's -- odds are  
18 we're not going to really get it very clean at the  
19 West Bay well.

20 So we are going to have a turbidity  
21 problem with the bottom screen down here. We kind  
22 of knew it going in, but we were weighing is it  
23 better to have a data gap or is it better to have  
24 kind of a dirty sample? And so we stuck a screen in  
25 there anyway. So just be aware that there's going

1 to be this problem throughout. That's just the  
2 nature of the sand.

3 NIOU: I would suggest in the future whenever  
4 you sample from that interval put a note "This well  
5 has geological problems," but --

6 CUTLER: Right.

7 BURIL: You could see potentially, I would  
8 guess, maybe some elevated levels in levels or  
9 something of that nature in the samples vis-a-vis  
10 just as a result of turbidity.

11 BISHOP: They'll be considered lower limit on  
12 your VOCs because they tend to --

13 BURIL: Yeah. They tend to hang onto those two,  
14 yeah. Okay. Well, we just wanted to pass that  
15 along to you, see where we were.

16 Okay. Anything else we want to talk on on  
17 number 1?

18 All right. You guys want to take a  
19 10-minute break now, or do you want to keep going?

20 BISHOP: Why don't we keep going. Get through  
21 maybe 3 and then take a short break.

22 BURIL: Okay. Well, number 2 is actually fairly  
23 simple.

24 The ATSDR did come out in the first part  
25 of August, and they spent, what, a couple days here?

1 NOVELLY: Yes.

2 NIOU: James, do you know what's ATSDR?

3 CHANG: Yeah. Yeah. Bonnie told me about that.

4 NIOU: Okay.

5 BURIL: And they've taken a lot of data with  
6 them and we've supplied them with quarterly  
7 groundwater results and things of that nature and  
8 they've got a lot of information that they're  
9 chewing on now. And they plan on coming back.  
10 Currently it's tentatively set for early November.  
11 This is when they'll actually do their public  
12 availability meetings.

13 Nothing really to report other than that  
14 they've made their first go-round with us and they  
15 seemed quite pleased with the information that they  
16 received. I don't know if you folks have heard  
17 anything that would add to this from these folks. I  
18 would assume not,  
19 but --

20 Okay.

21 So that is ongoing and we'll be hearing  
22 from them probably about the time we all get  
23 together like this.

24 All right. Number 3, perchlorate. This  
25 is one that continues to escalate, it seems.

1           We met with the City of Pasadena last week  
2 to just start sharing some information with them  
3 about what we had in terms of data from perchlorate  
4 and also in terms of the geohydrology in the area  
5 here. And we also got some information back from  
6 them regarding their well construction and some of  
7 the data that they had.

8           They are sampling currently the Arroyo  
9 well, which is in the southernmost tip of our  
10 off-site parking lot on the east here. They're  
11 sampling that weekly. The last sample that they  
12 took showed that the perchlorate concentrations were  
13 up over 100 parts per billion. Now, that's high.  
14 In comparison to what we have here on the Lab,  
15 that's getting up there. That's almost undiluted  
16 from the Laboratory in certain areas.

17       GEBERT: So that's significantly higher than the  
18 first --

19       BURIL: Yes.

20       GEBERT: -- sampling event.

21       BURIL: At least twice.

22       GEBERT: Only a couple months ago.

23       BISHOP: About 50 then.

24       BURIL: I think it was 44 then and now it's up  
25 over 100. So it's going up out there.

1           The amazing thing that they pass along to  
2 us, also, though, is that Well 52, which is the next  
3 one immediately south, the concentrations are steady  
4 and they're below the 18 parts per billion.

5           Now, the thing that struck us on this is  
6 that, well, there must be something about the way  
7 the wells are constructed, about the setting of the  
8 pump intakes, something that's creating this kind of  
9 a dichotomy of concentration.

10          And so we're looking now to our computer  
11 model to try and figure that out. Our computer  
12 model has presently been calibrated. We were going  
13 through a more detailed calibration to really hone  
14 this thing down. And our consultants actually found  
15 what appears to be a flaw in the program. And so  
16 now we're working with the USGS to try and interpret  
17 how to deal with this, what appears to be a flaw in  
18 the program.

19          I don't know everything about it. Mark,  
20 can you explain a little bit more about what the  
21 flaw was or --

22          CUTLER: No. Don't know the details. But, you  
23 know, using this mod flow feed, kind of this  
24 backward calibration fine tuner model, the result  
25 came up and that the people were using looked at it

1 and just -- something was not right. So the deeper  
2 they dug, they literally found a bug in the program.  
3 I don't know the details on how. And they've spent  
4 about a month trying to convince the USGS that, yes,  
5 there is a problem with your program. And USGS kept  
6 saying, "Well, try this, try that." He kind of knew  
7 this wasn't going to work, but he did it anyway just  
8 to keep this process going.

9           And sure enough, they finally have  
10 acknowledged there is a problem with mod flow P,  
11 this particular scenario. He's hired a woman that  
12 works at the USGS there in Colorado to help  
13 troubleshoot this. And he's hoping here within a  
14 couple weeks to have a better idea. How long it  
15 will take to fix this, and if they can't fix this,  
16 just to get this moving, is to do a lot of this  
17 manually, which it looks like it would take about a  
18 month's worth of work to do this manually if they  
19 can't get this bug fixed.

20           BISHOP: When you say mod flow P, I'm not  
21 familiar with that P designation. Is that a  
22 different version?

23           CUTLER: Right. The P is like parametric. It's  
24 where basically you can -- you reverse model. We've  
25 gone through the calibration and the model will come

1 up to reasonable value, say, for hydraulic  
2 conductivity or things like that.

3           Now we tell the computer, okay, here is  
4 our range of reasonable hydraulic conductivities.  
5 You pick in this range which K value you want to  
6 make our water levels match what we've observed.  
7 And so it is a fine tuning step. Not being a  
8 modeler, I don't know the technical details of how  
9 that works.

10          BISHOP: Okay. Just checking. Because it's  
11 essentially the module that allows you to do that  
12 picking. It's not mod flow --

13          CUTLER: No.

14          BURIL: Mod flow model is not the problem. It's  
15 the parametric calibration that's created from.

16          CUTLER: Exactly.

17          BISHOP: There may be other alternatives to  
18 using mod flow P to do that. But I don't --

19          BURIL: Actually, our model, even without the  
20 mod flow P, is calibrated fairly well. It looks  
21 good when you look at the results. We have a draft  
22 report here on the calibration that we are  
23 reviewing. We can share that with you probably next  
24 time around. It looks good.

25                 And I think that we're actually in a

1 position of saying this thing is something we can  
2 start using to start to pick scenarios, various  
3 pumping schemes out here in the Arroyo, and so  
4 forth. In fact, that's one of the things that once  
5 we understand this problem that they were actually  
6 going to go ahead and start doing, is to start  
7 talking about which scenarios we should do and we'll  
8 be talking to the Raymond Basin folks to be sure  
9 that they tell us the kind of things that they  
10 typically do as far as pumping schemes. One  
11 organization might have an operating way of doing  
12 things that they only run certain wells together  
13 and, you know, leave other wells off. So we'll be  
14 getting that kind of information and try to model  
15 those kinds of scenarios to try to understand what  
16 the hydrology of the area does as it is stressed in  
17 different ways.

18           As far as what we've known right now with  
19 the model, it appears very, very reasonable from  
20 what we see in the board logs and with the modeling,  
21 is that we've got what appears to be six layers of  
22 differing hydraulic conductivity in the soil.  
23 They're not what you'd call distinct horizons per  
24 se. I think we can say that without going off too  
25 far. But there appear to be six distinct layers of



1 differing hydraulic conductivity that each of those  
2 responds differently when it's placed under stress  
3 with the pumping wells out here in the Arroyo. This  
4 is one of the reasons why we see such differences  
5 between screens when we were out there sampling for  
6 the pressure gradients that we have, the West Bays.

7           When the pumps from the Arroyo aren't  
8 doing anything, the producers are basically shut  
9 down, say, for the winter. When they go back to  
10 MWD, all of these West Bay wells basically read  
11 exactly as you would expect, you know, simply the  
12 same across. When these things start to pump, you  
13 begin to see these gradations in the pressure. And  
14 they appear to indicate that there's maybe  
15 preferential flow areas. And we also seem to have  
16 found two discontinuous aquatards. They aren't  
17 aquatards in the classic sense where you've got, you  
18 know, a solid clay layer, but something there is  
19 impeding the flow to a much greater degree than what  
20 you would anticipate.

21           And some of those are right in the  
22 Laboratory. They literally end almost right under  
23 our feet and then extend off to the east a distance.  
24 And then there's a deeper, larger one that tends to  
25 be less of an influence until you get down to the

1 very bottom layer.

2 BISHOP: Now, are these -- these are constructed  
3 to make the heads match on the well?

4 BURIL: Well, they're partially that. But  
5 they're also based on the boring logs both in terms  
6 of the qualitative review and the E logs, try and  
7 verify that, yes, there really is a soil type that  
8 would create this lower hydraulic conductivity and  
9 therefore, you know, it explains why it should be  
10 built into the model to help make these things to  
11 match up.

12 BISHOP: But you lots of times have to create  
13 ones that --

14 BURIL: Right.

15 BISHOP: -- you don't have any evidence for,  
16 but --

17 BURIL: It's what makes the model work.

18 BISHOP: Right. And so you know that there's  
19 something down there. It's probably not an  
20 aquatard. It's probably just a lower K --

21 BURIL: Right.

22 BISHOP: -- stereo that --

23 BURIL: We actually have, based on the E logs and  
24 so forth, we have reason to say that there is  
25 actually a physical material there that's

1 significantly different than the materials above or  
2 below it.

3           What appears to be happening at this  
4 particular point, and this is very preliminary. I  
5 don't even have the graphs yet, which is why I'm  
6 just telling you about it here. But there appears  
7 to be a preference for the perchlorate to travel in  
8 two layers that are low. In other words, we have  
9 layer 1, then there's a small -- this continues off  
10 the chart -- layers 2 and layer 3. Layers 2 and 3  
11 appear to be the ones that carry the perchlorate, at  
12 least based on the data that we currently have on  
13 perchlorate. And that's the latest stuff, the same  
14 stuff we gave to Raymond Basin the last time around,  
15 Jon.

16           So in a meeting with the City we batted  
17 around the idea -- and I know that they were talking  
18 about using the spreading basins as a means of maybe  
19 reversing the gradient, pushing the perchlorate  
20 back.

21           Well, based on the data that we have from  
22 the model showing that these aquatards exist,  
23 particularly the shallow one, and the data we have  
24 that shows the perchlorate's actually apparently  
25 preferentially traveling at a deeper level, we all

1 came to the conclusion that flooding the basins is  
2 probably not the way to go. That probably is not  
3 going to create anything other than a localized  
4 reversal in the upper layer. And the upper layer  
5 currently, to the east of us, is clean. So it  
6 really wouldn't do us any good.

7           What they're talking about doing now is to  
8 try --

9       BISHOP: Let me just --

10      BURIL: Sure.

11      BISHOP: -- jump in here because that seems to  
12 contradict what we've seen with the carbon tet,  
13 which is that during times when we have -- we seem  
14 to have water being recharged, we're getting that  
15 mounding, we're getting -- we get lower levels in  
16 our monitoring wells. During these times when we  
17 haven't had a lot of rain, we start seeing more of  
18 it show up across the Arroyo.

19      BURIL: Yeah. And that's --

20      BISHOP: That's also in the deeper zone. Right?

21      BURIL: I think it has to do with the mobility  
22 of the contaminant. It appears that the carbon tet,  
23 being an organic, tends to be retarded in various  
24 ways and it doesn't seem like it gets pulled down as  
25 easily as the carbon -- or as easily as perchlorate.

1           Perchlorate being, for all intents and  
2 purposes, as mobile as the water, follows the water  
3 and conditions appear to be such that when they're  
4 pumping those wells it somehow is drawing past or  
5 through the aquatard, probably past it, because we  
6 actually have it ending -- based on our calculations  
7 it's ending like right at the edge of Well MW-7. So  
8 that we could possibly have some form of a down pull  
9 that while it doesn't affect the organics as much to  
10 actually draw them in, it does affect the  
11 perchlorate and the perchlorate appears to travel  
12 more easily.

13           So there's that consideration. We don't  
14 know all the ins and outs of this thing yet. This  
15 is all speculative in large part right now. But in  
16 drawing it out on the board with those folks, their  
17 thoughts were that pushing it back with the  
18 spreading basins probably wouldn't be the most  
19 effective means in terms of perchlorate and that  
20 they're now thinking that it might be better to  
21 change the pump intake settings and see whether we  
22 can preferentially draw from other layers which  
23 don't appear to be carrying the perchlorate to such  
24 a high degree.

25           And one of the things that they had talked

1 about was to take a series of packers with a pump in  
2 the middle, run it down their well and sample at  
3 various locations and see what we're picking up in  
4 terms of perchlorate and then maybe, depending upon  
5 the data that's generated from that, ultimately work  
6 their intake system such that normally  
7 preferentially would draw from a layer which shows  
8 very low, if any, perchlorate, and hopefully will  
9 have enough conductivity and the screen will be in  
10 good enough shape that you can still get reasonable  
11 production rates out of that particular section.

12               So this is all just as of -- what was it,  
13 Pete? Last Wednesday?

14           ROBLES: Yes.

15           Buril: And very, very conceptual kind of  
16 thoughts that we're dealing with here. They're  
17 going to be coming back to us with some thoughts on  
18 how to do that and what they'd like to see done. I  
19 think next Tuesday there's a Raymond Basin task  
20 force meeting.

21               Are you going to be at that one, Jon? I  
22 think they'll probably want to talk about that as  
23 well.

24               So that's where we're at with the  
25 perchlorate things.

1           I have not heard anything from the  
2 consortium that I've been in contact with, which  
3 include the ones that Lockheed are involved with and  
4 the Water Quality Authority in San Gabriel Valley  
5 and one other one up north. No one has found  
6 anything that appears to be the panacea in terms of  
7 this is what to use and it's available and it's  
8 usable right now. I don't know if you folks have  
9 run across anything that is holding particular  
10 promise, but the biologic stuff that I think AeroJet  
11 was working on appears to have some hope to it, but  
12 there's some -- well, say, some resistance by some  
13 of the water agencies to taking water that's been  
14 treated with bacteria for the fear of having some  
15 form of a water quality issue down the road. I  
16 don't know. That may be easily fixed. I don't  
17 know.

18           But I haven't heard a thing as far as  
19 anything that was opportune for an immediate  
20 treatment type of a system for a production-scale  
21 facility.

22           And from the silence and looks on your  
23 faces, I would say neither have you folks.

24           RANDOLPH: Well, just as a side light, one of  
25 our chemists, a senior chemist, in fact he's been

1 working on the project, printed out here just  
2 recently that the back-up oxygen generator on the  
3 Mir space station are lithium candle -- lithium  
4 perchlorate candles. I said, "Well, how about heat  
5 and lithium? Will it work," question mark?

6 BURIL: Yeah.

7 Now, there's one thing that we're waiting  
8 to get some information back from our lab,  
9 Montgomery-Watson, on two fronts. First, we're  
10 asking them to give us kind of an overview of how we  
11 might sample for perchlorate in soils. And the idea  
12 behind it is that it should be relatively easy when  
13 you take a known volume of soil and a known volume  
14 of water and shake them up according to some  
15 specific methodology and then draw off the liquid  
16 and analyze that for perchlorate and back calculate  
17 what the concentration of the soil was.

18 They're developing a proposal for doing  
19 that kind of method. That's in response to the  
20 things that we talked about at the task force  
21 meeting. I'm hoping to see that within the next  
22 week or so.

23 And another thing that they had indicated  
24 was of interest was that there's some ideas  
25 regarding ion exchange resins and whether or not the



1 perchlorate would be responsive to being withdrawn,  
2 basically drawn out of the water using these ion  
3 exchange resins. And they're looking at that as  
4 another possible means of actual treatment.

5           My own experience with these stems back to  
6 power generation at the various power plants.  
7 They're pretty darn effective and you can get some  
8 fairly massive flows through these things depending  
9 upon how you size them. And generally the water  
10 quality coming out of the boilers is about as close  
11 to distilled water as you can get in many ways.

12       BISHOP: The water going in also.

13       BURIL: Yeah. Exactly. Exactly. You have too  
14 many deposits plating out inside these pipes, you  
15 end up burning these pipes up and create a hell of a  
16 mess.

17       BISHOP: The only thing I've heard about that is  
18 that they have tried a couple resins that haven't  
19 worked.

20       BURIL: Really?

21       BISHOP: And I don't know which ones they are.  
22 I just heard it, that they're still looking at  
23 different resins.

24       BURIL: I know there's dozens of them out there.  
25 But that appears to be one potential. And I'm not

1 surprised that he wouldn't find one right off the  
2 bat. There may be one that works, and only one.  
3 Who knows.

4 BISHOP: It would seem to make sense. I mean,  
5 it's the same -- we're talking about similar type of  
6 chemical compound.

7 BURIL: Yeah.

8 BISHOP: But resins work well.

9 BURIL: So I'm looking for some information on  
10 that. I don't know if you folks have anything in  
11 your realms that you can offer as suggestions as  
12 ways to go. NASA as an agency is interested in  
13 this, I know, and has even got some money in their  
14 pocket to add to the pot, if need be.

15 CHANG: Yeah. You know, if you want to become  
16 part of a test program, Applied Process Technology  
17 right now is working with Kevin Mayer on some  
18 reduction of technologies, and I'll keep you  
19 informed of how that's coming.

20 BURIL: That would be great.

21 CHANG: And I think in the September-October  
22 time frame there's a company called American  
23 Waterworks Association. They're going to be giving  
24 some type of a perchlorate conference down here in  
25 the Ontario area. And I guess you guys probably

1 would be interested to attend that.

2 BURIL: I would be very interested, yeah. If  
3 you could pass along the information to us, that  
4 would be very helpful.

5 CHANG: Okay.

6 BURIL: Great.

7 We have down here the task force  
8 formation. We've been giving some thought to this  
9 and have come up with a mechanism I think that makes  
10 NASA comfortable as an agency to pursue and I think  
11 will work well with the Raymond Basin folks.

12 What we're thinking right now is we'd like  
13 to use the existing perchlorate task force as a  
14 mechanism. And generally just go in with the  
15 ability to share the information that we have,  
16 including any workplans that we're anticipating  
17 doing. And give them the opportunity to comment  
18 back to us, say, whether it be research in various  
19 things like ion exchange or whatever it might be.  
20 And if we can reasonably associate that with the  
21 Superfund project here at JPL, that we would  
22 strongly consider incorporating that work into it  
23 and then reporting back on the data once it's been  
24 generated back to the board.

25 The thing that headquarters, and, Peter,

1 correct me if I'm wrong on this, the thing that  
2 headquarters was very concerned about us doing is  
3 participating in something that would deal with  
4 basin-wide issues, given the fact that the basin is  
5 as large as it is and you're talking about going all  
6 the way out to -- out past Pasadena. Unless we can  
7 draw a very reasonable nexus between our own problem  
8 and the problems basin-wide, then they were  
9 reluctant to agree to the idea that we would go  
10 ahead and deal with basin-wide issues, that we would  
11 rather focus on the issues that are immediate to  
12 JPL. And initially, at least, it appears to be  
13 Pasadena and Lincoln Avenue that have the most  
14 immediate concerns.

15           And that's basically where we're at right  
16 now. The formation of a formal RAB is something  
17 that NASA headquarters has indicated they would  
18 prefer not to do and that they keep it at the level  
19 that I've just described.

20           ROBLES: We also talked to Raymond Basin, and  
21 they have concurred with that. They're afraid of  
22 expanding it themselves. They want to be the focal  
23 point for all the information. The lawsuit cases  
24 have been very jittery, because by association  
25 they're really the ones that are being targeted

1 without being named in the suit, because it's  
2 basically saying that (COULDN'T/CAN'T HEAR) given to  
3 the individuals, the plaintiffs. They're saying  
4 they never did that. And so that's the question  
5 that really is of a concern. So NASA headquarters  
6 has a real concern about only a RAB with the total  
7 public, and the Raymond Basin people are very much  
8 concerned about forming it with the total public.  
9 They work with the public. They're the clients.  
10 They give them the information. They get their  
11 responses. They bring their concerns. And they  
12 would rather be the focal point in that. This is  
13 per the purveyor of water.

14 BURIL: So that's our approach right now for  
15 working with the Raymond Basin folks. And they have  
16 indicated, as Pete said, they're very happy to work  
17 with us any way that they can.

18 And again, as long as we're in a position  
19 of being able to identify this as something that we  
20 would be doing for Superfund regardless, we'd be  
21 happy to share the information with them. I think  
22 we're really in a position of having to deal with  
23 the perchlorate issue as a remedial  
24 investigation/feasibility study issue. Certainly we  
25 can't treat for VOCs unless we figure out a way to

1 deal with the perchlorate as well.

2 BISHOP: Yup.

3 BURIL: Okay. Well, that's kind of where we're  
4 at with perchlorate. It's sure still out there.

5 BISHOP: I think I just want to make a quick  
6 comment about the purveyors. My experience with  
7 purveyors is that they're less interested in public  
8 dissemination of information to the public as damage  
9 control. You know, they're in a different position  
10 than you are with regards to --

11 ROBLES: Community involvement.

12 BISHOP: -- community involvement. They need to  
13 keep -- they have an image issue because they  
14 provide water and they're not used to,  
15 quote-unquote, answering to the public and, you  
16 know, they're used to providing water and getting  
17 paid for it.

18 ROBLES: Telling the public what they're going  
19 to get or not.

20 BISHOP: Right. So I agree with you that they  
21 will likely not to want to bring in a larger public  
22 involvement. And I think it's fine to work with  
23 them in that context. You may still need to, on  
24 your own, be more of an outreach to the public.

25 ROBLES: We're still going to have the community

1 relations. We're still going to have that problem.

2 BURIL: We still have that. We still have the  
3 requirements under the ROD and the public's  
4 responsiveness surveys and all of that that we'll  
5 have to deal with.

6 BISHOP: Sure.

7 ROBLES: And when the time comes --

8 BURIL: Certainly this won't be held from the  
9 public in any way, in the end.

10 GEBERT: Are the public aware?

11 BURIL: There are newspaper articles at least  
12 once a week.

13 GEBERT: On perchlorate?

14 BURIL: Oh perchlorate, yeah.

15 GEBERT: On perchlorate specifically?

16 BURIL: Yeah.

17 GEBERT: So they have been informed --

18 BURIL: Oh, yeah.

19 ROBLES: Oh, yeah.

20 GEBERT: -- in some ways.

21 NOVELLY: But not by the water companies.

22 GEBERT: Not by the water companies.

23 BURIL: Not by the water companies. And not  
24 specifically by us, either. But there is a  
25 knowledge out there. I've been in contact with

1 reporters, and so forth, to give what information we  
2 have and I know the water purveyors, particularly  
3 Pasadena, have as well.

4 ROBLES: We're still going to --

5 BURIL: You were even contacted, weren't you,  
6 Jon?

7 BISHOP: Yeah. I've been contacted.

8 ROBLES: We're still going to have public  
9 meetings when we get to the record of decision. I  
10 don't know how we're -- you know, we're going to  
11 have to handle it. There's going to come a point  
12 when we have public meetings the purveyors of water  
13 are going to be up tight about it. But we've got to  
14 follow that process. Right now they want us to work  
15 with them almost exclusively. We're saying as we do  
16 have a public relations issue we're still dealing  
17 with the public in that sense.

18 GEBERT: Right. I agree with Jon that, you  
19 know, you have to be a little careful in using the  
20 water purveyors, you know, solely as the contact  
21 point for the public. The interests are not the  
22 same.

23 ROBLES: Right.

24 BURIL: That's understandable.

25 Okay.



1           CHANG: (COULDN'T/CAN'T HEAR) Raymond Basin  
2 that's going to provide that --

3           ROBLES: Yeah. The Raymond Basin has set up a  
4 perchlorate task force and we're dealing with the  
5 perchlorate task force. But the Raymond Basin takes  
6 everything from almost Glendale --

7           BURIL: Just about, yeah.

8           ROBLES: -- all the way to --

9           BURIL: Out to almost Alhambra, yeah.

10          ROBLES: -- almost to Alhambra.

11          BURIL: It's a fairly large area.

12                 Okay. Well, that's everything I can pass  
13 along to you about the perchlorate. Are there any  
14 questions? Am I forgetting anything, Judy? Okay.

15                 It's 10:30. Why don't we go ahead and  
16 take a 10-minute break and we'll come back and see  
17 if we can knock the rest of these off before lunch.

18                 (A recess was taken from

19                 10:26 a.m. until 10:40 a.m.)

20          BURIL: Okay. Let's go ahead and kick back into  
21 gear.

22                 I wanted to talk on number 4 about the  
23 OU-3 interim ROD. And actually there's more to this  
24 than just the interim ROD portion of it. And  
25 actually we might end up combining a little bit of 4

1 and 5 as we discuss this.

2 But first of all, one of the concerns that  
3 we've had regarding the interim ROD or any ROD for  
4 Operable Unit 3 is the data from third parties. We  
5 talked last time how we were having a little bit of  
6 trouble getting data from some of the folks,  
7 particularly one of the water purveyors who we're  
8 currently in negotiations with. We have since gone  
9 to the DHS and have gotten some of the data that  
10 they hadn't been forthcoming with and we're probably  
11 going to continue to do that just to be able to have  
12 the data.

13 I remember, Jon, you said you were going  
14 to be at one point in time possibly writing them a  
15 letter asking for the data. I would encourage you  
16 to continue that line of reasoning.

17 BISHOP: Well, what I -- I talked to someone  
18 from your office. What I really need is what that  
19 data is, you know.

20 BURIL: I thought that they told you.

21 CHANG: No, they haven't got back to me yet.

22 BURIL: Oh, all right.

23 BISHOP: I figured when it was critical someone  
24 would get ahold of me and I could ask them for the  
25 specific data. I'm comfortable and I don't think

1 it's reasonable to say "I want all of your data."

2 BURIL: No, that's --

3 GEBERT: I think that's true.

4 BISHOP: But I do want to get the data you need,  
5 especially the raw water data.

6 BURIL: Yes.

7 BISHOP: I expect that they have concerns on  
8 their, you know --

9 BURIL: Well, they have concerns on their part  
10 as well, so --

11 BISHOP: Yeah, but --

12 BURIL: Okay. Mark, if you'll make a note to  
13 get to Jon with the individual data that we need.

14 CUTLER: Okay. I thought we gave that to you at  
15 the last RPM meeting.

16 BISHOP: Well, if we did I -- for some reason I  
17 was kind of waiting and I talked to -- I don't  
18 remember who it was.

19 BURIL: Probably Mark Losie, would be my guess.

20 CUTLER: I think I called you a couple times  
21 before I left.

22 BURIL: Let's be sure we get a full list.

23 CUTLER: We have this list --

24 BISHOP: Okay.

25 CUTLER: -- that we sent to you back in --

1 BURIL: If you got it there, that's great.

2 We'll just --

3 CUTLER: All of that, obviously, you don't want  
4 to get. But those are the things that we asked to  
5 get that we thought we needed for a feasibility  
6 study. Not all of those things we need to get from  
7 Lincoln Avenue. I can make a copy of that for you.

8 BISHOP: Right.

9 ROBLES: And highlight which ones are the ones  
10 that he needs to put in his letter.

11 CUTLER: Right. Right.

12 BURIL: Okay. So we'll continue working in that  
13 way.

14 CUTLER: If there was a misunderstanding, I  
15 apologize. I just --

16 BISHOP: No problem.

17 BURIL: Okay. We'll continue working that way  
18 on both fronts to try and get all the data that we  
19 need.

20 The second question that I had here is  
21 regarding ARARs. Really, it revolves around  
22 perchlorate. We have a DHS provisional level for  
23 action, and it's not what you'd determine a MCL by  
24 any means, although I don't know if there's plans on  
25 any of the regulatory in these parts to establish

1 an MCL. I'm not familiar with how we would deal  
2 with a provisional level like we have with DHS in  
3 terms of an ARAR.

4 If you folks have any insight to that that  
5 you could offer it would be helpful.

6 CHANG: Yeah, I got a call in to my attorney and  
7 when he gets back from vacation I'll let you know --

8 BURIL: Okay.

9 CHANG: -- what he thinks on that.

10 BISHOP: I -- go ahead.

11 CHANG: I was done.

12 BISHOP: You know, I don't know what the legal  
13 ramifications are pursuant to the agreement, but  
14 it's pretty clear to me that Department of Health  
15 Services is not allowing people to serve water above  
16 18, that that is -- has to be taken into  
17 consideration.

18 BURIL: It's not that they don't allow you to.  
19 It's just that either the purveyor or the DHS, or  
20 both people, end up notifying the customers of that  
21 water company that their water has got above this  
22 provisional level. But they're still allowed to  
23 serve it. Of course, you know, all the  
24 ramifications of notifying your constituency that  
25 your water has perchlorate in it above this action

1 level is something that all the water companies want  
2 to avoid, and understandably so.

3           So that's where my confusion comes in, is  
4 that it's not a regulatory shut-off mandate. It's  
5 a, you know, inform your people and you can continue  
6 to do what you want to do. So I'm a little confused  
7 myself on how we approach that kind of a level since  
8 we are not talking about a regulatory mandate for  
9 health concerns, you know, like an MCL or a MCLG or  
10 something of that nature.

11           What you're saying, you know, seems  
12 reasonable, but I just wanted to see whether you  
13 folks had a definite way of how we would want to  
14 handle this given that regardless, whether it's in  
15 an interim ROD or in a final ROD, I doubt whether  
16 we'll have an MCL by that time, if one is actually  
17 going to be established.

18           CHANG: I don't foresee one being established by  
19 EPA, because it's not a national issue.

20           BURIL: Uh-huh.

21           GEBERT: If there is not an MCL on perchlorate  
22 then it would not be considered as an ARAR?

23           BURIL: That's what I'm asking basically, is  
24 should we be considering it -- maybe it's one of  
25 these to-be-considered type of things, which is

1 fine. But I just want to be sure we approach this  
2 in the appropriate fashion so that we don't get  
3 ourselves wrapped around the axle, so to speak, when  
4 it comes time to review all these. So I'll lay that  
5 on your doorstep there to see what -- how you might  
6 want to handle that.

7           The second issue here that concerns me,  
8 and when we're talking about OU-3, and actually it's  
9 going to focus on OU-1 as well. That is the risk  
10 assessments. I know we're coming up to the point in  
11 time where we are going to start doing our risk  
12 assessments with the next work that we're going to  
13 be planning to do here for the sampling is going to  
14 be the RI events for Operable Unit 1. And so now  
15 we're at a crossroads as to how we deal with the  
16 risk assessment issue as it regards perchlorate.

17           I was wondering if you folks have  
18 approached this with anybody else at this juncture  
19 and, if you have, what approaches have you decided  
20 you might take with them. You might give us insight  
21 as to how we should proceed.

22           NIOU: Does perchlorate have any definite risk  
23 in it to health?

24           BURIL: Yes. It appears to be a --

25           ROBLES: It's used for people that have

1 hyperthyroidism to leach the iodine out of their  
2 thyroids. It creates sluggishness and a few other  
3 things in large concentrations. Nobody knows what  
4 the low levels in the drinking water cause. These  
5 are two concerns in this issue. The ARAR issue and  
6 the health risk issue are tied very much together.

7 NIOU: Yes.

8 ROBLES: The provisional requirements only say  
9 that you have to notify the public. It says you  
10 don't not have to give them that water.

11 But then the key question is: How do we  
12 tie that into a risk assessment? It's not an MCL  
13 level. Do we use 18 as saying, "Hey, we can't or  
14 can we use that as a risk issue, treat it like a  
15 MCL, or not?" We need guidance in this because it's  
16 going to throw our whole risk assessment base and  
17 our whole study right out the window.

18 We've got to know what we need to do with  
19 perchlorate. And will you guys, as regulators,  
20 stand behind us? We need guidance and will you  
21 stand behind us once we all come together in  
22 consensus?

23 BURIL: I think the thing, just to answer your  
24 question a little more fully, Stephen, the thing  
25 about perchlorate right now is that it, as Pete



1 said, it inhibits the absorption of iodine by the  
2 thyroid gland. And by doing so the thyroxin, the  
3 hormone that's produced, is inhibited so you get  
4 some health effects as a result of lowered thyroid  
5 activity. And the health effects, they stem  
6 anywhere from, you know, serious metabolic disorders  
7 to general malaise and --

8 ROBLES: Depression --

9 BURIL: -- depression.

10 ROBLES: -- sluggishness.

11 BISHOP: It's pretty serious stuff.

12 ROBLES: It is. They give this for  
13 hyperthyroidism. They do give them perchlorate so  
14 that they can lower the thyroid activity and make it  
15 lower.

16 BURIL: And the impact that this material has on  
17 susceptible folks, like ones who already have a  
18 lowered thyroid activity or ones who -- women who  
19 may be pregnant and in long-term ingestion by  
20 infants and so forth, is completely unknown.

21 ROBLES: Right. It attributes to overweight, to  
22 sluggishness, to depression, to lethargic activity,  
23 to -- you know.

24 BURIL: Even some questions about infertility,  
25 so it's --

1 ROBLES: Right.

2 BURIL: -- amazing, the spectrum.

3 ROBLES: ATSDR did not want to touch this with a  
4 10-foot pole because there is no medical research  
5 out there for this. There is no toxicological data  
6 on long-term effects of perchlorate at these low  
7 levels.

8 CHANG: Yeah. There probably won't be any type  
9 of guidance at all until that million dollar  
10 perchlorate study group studies with the Air Force.  
11 They're doing a real interesting study on rats right  
12 now and what organs the perchlorate targets.

13 BURIL: Do you have any idea, James, on how long  
14 that study is going to take?

15 CHANG: It looks like a three-month study and I  
16 think they started, they were planning on starting  
17 that this month sometime. So hopefully in the  
18 January time frame we'll have some health  
19 guidelines.

20 BURIL: Okay. This may be a question that we  
21 may probably end up just deferring until that study  
22 is over.

23 ROBLES: We cannot do a risk assessment without  
24 addressing perchlorate. The public will not accept  
25 it.

1 BURIL: I don't think we as reasonable, rational  
2 specialists would put it out there either.

3 ROBLES: And to have it, what is to be  
4 determined later is not going to be -- so we have to  
5 come up with a game plan together.

6 BISHOP: Right. And you know, until we have  
7 some other information, I think -- I don't think  
8 there's any way that we can say that health risk is  
9 going to be higher than the provisional level the  
10 DHS has set. Because we have no reason to say that.

11 BURIL: You're right.

12 BISHOP: That's the only thing we have to go on  
13 right now and that doesn't mean it won't change in  
14 the future. But, you know, I don't -- unless we  
15 have some other information that we can say, yes, to  
16 point to and say, "Well, this is why we believe  
17 that."

18 BURIL: Well, yes. And I think in practical  
19 terms when you start talking about a numbering  
20 level like you're describing that the inertia to  
21 actually raise the regulatory limit, even though  
22 it's a provisional limit, is going to be incredible.  
23 The opportunity for that to actually happen, I  
24 think, is probably fairly nil in the short term.

25 ROBLES: Has anybody in their career ever seen a

1 provisional level raised? I have not.

2 BISHOP: Wasn't carbon tetrachloride provisional  
3 .5 for the EPA and then they've raised it to .5?  
4 The State has stayed at point .5.

5 BURIL: I don't recall, but it might be.

6 ROBLES: In my career I've never seen it happen.

7 CHANG: I think that when this health study is  
8 done with these rats it could possibly raise it and  
9 do things with the results on it.

10 NIOU: I heard several years ago that they say  
11 they would raise TCE level, but I never seen that.

12 GEBERT: They're still working on that one.

13 BURIL: They're still pushing that.

14 BISHOP: I don't know how many years they've  
15 been talking about it.

16 NIOU: Yeah.

17 BURIL: I had the folks from that consortium  
18 come and talk to me and they're looking for our  
19 involvement, which we politely declined. But  
20 basically they were looking to raise to it 50 or  
21 higher, if possible. They set a number of health  
22 risk assessments and things. That was four years  
23 ago when they came and talked to me and then they  
24 thought that they would actually have something  
25 within a few months. Well, here we are 48 months

1 later, if that's a few months, I don't know, but  
2 still nothing.

3           So I think that their work aside, I still  
4 think that some of the issues of the perception of  
5 having solved a health risk issue by making the  
6 numbers more amenable to not having a problem as  
7 opposed to finding a solution to fix the problem  
8 with the numbers not changing is what people are  
9 very concerned about and don't really want to  
10 associate themselves with, at least at this point.

11           Okay. It sounds to me that, at least in  
12 terms of the perchlorate, we've still got a -- the  
13 jury's out, so to speak. We don't have any firm  
14 answers to offer at this juncture. Hopefully, the  
15 study that the Air Force is doing will offer us up  
16 something.

17           In line with that, one of the things that  
18 we talked about in our telecon goes directly to  
19 number 5 here, the schedule. Overall, right now  
20 we're a little behind in the schedule for a couple  
21 things, but nothing terrible -- nothing I don't  
22 think we can't make up.

23           Basically I don't want to change anything  
24 with Operable Units 1 and 2. But operable Unit 3  
25 with the interim RODs we discussed at the last

1 telecon is something that, given the perchlorate  
2 issue, it doesn't appear to be a prudent step at  
3 this point to issue an interim ROD, particularly  
4 since the one issue that is going to be ultimately a  
5 driver in how we ultimately come to remedial action  
6 is incapable of being addressed at this point in  
7 time.

8           What we were thinking at this point was to  
9 marry the schedules for Operable Units 1 and 3 and  
10 eliminate the Operable Unit 3 interim ROD. By  
11 marrying these two we then get up-to-the-minute, if  
12 you will, information from all the wells that we  
13 currently have and we'll include perchlorate in  
14 that. We won't be generating the second round  
15 until, what is it, Mark? January?

16       CUTLER: December through January.

17       Buril: December, January time frame.

18       CUTLER: The second RI round for OU-1.

19       BURIL: For OU-1. And so by that time hopefully  
20 some information would be available to us from the  
21 Air Force study that James indicated and we may have  
22 some means of dealing with both Operable Unit 1 and  
23 Operable Unit 3 in terms of risk assessment and so  
24 forth.

25           So what I'd like to lay on the table for

1 you to consider is the idea that we formally abandon  
2 the idea of an interim ROD for Operable Unit 3 and  
3 that we marry the schedules of Operable Units 1 and  
4 3 together. That's not to say that we're going to  
5 produce one document for both of those.

6 I think we can leave those separate for  
7 the time being unless in the future we decide it  
8 might be more advantageous to put them together, but  
9 that's something we can decide down the road.

10 But we'd like to go ahead and proceed on  
11 that basis and, you know, if you have any immediate  
12 feedback regarding that I'd be interested to hear  
13 it.

14 GEBERT: So in essence we're going back to the  
15 original schedule in a lot of ways.

16 BURIL: In a lot of ways, yes.

17 GEBERT: Formerly the interim ROD was --

18 BURIL: Yes. The interim ROD seemed to be a  
19 reasonable idea before because we thought we had a  
20 pretty good handle of what was going on with the  
21 VOCs, we knew how we were going to treat it  
22 ultimately and so forth. Now it's just, you know,  
23 with the perchlorate issue we really don't have a  
24 handle left like we did.

25 GEBERT: Yes. That makes sense to me not to

1 move forward with something --

2 BISHOP: I don't really have a problem with at  
3 least halting on any immediate movement on the  
4 interim ROD, but I also think we would be really  
5 aggressive in looking at protection strategies for  
6 the water supply, and that may mean some sort of  
7 emergency response action. If something comes up  
8 that says this will work or --

9 BURIL: Oh, yeah

10 BISHOP: -- this is what we can do to protect  
11 these wells, we were not in a position of then  
12 talking about a 18- to 24-month period to go through  
13 the --

14 BURIL: The whole feasibility study and the  
15 whole route.

16 BISHOP: Right. You know, that may really end  
17 up delaying that ROD even longer for OU-3. We may  
18 have to decouple it from one to deal with doing some  
19 sort of protection stream and then looking on for  
20 long term. Is that a factor?

21 BURIL: Yes. And in fact, I would personally  
22 see that if someone out there came up with an  
23 immediate solution for the perchlorate issue and  
24 suddenly we have a mechanism and it's good at  
25 production in quantities, that we would move very



1 rapidly to deal with that. And you know, that the  
2 paperwork in the forms of interim RODs or workplans  
3 or whatever else kind of caught up to it afterward,  
4 I personally wouldn't find that to be very  
5 objectionable. I mean, we could work through that.  
6 But I would not want to delay simply to deal with  
7 the process. I mean the process itself can  
8 recognize that the goal is going to get that  
9 remedial thing in place as rapidly as we can.

10 BISHOP: You brought up earlier today that there  
11 seems to be preferential pathways to perchlorate, at  
12 least in your initial looking at it with the City of  
13 Pasadena --

14 BURIL: Right.

15 BISHOP: -- which would lead to, you know, a  
16 zone type, of putting in a very specific zone  
17 extraction --

18 BURIL: Right.

19 BISHOP: -- upgradient of the production wells  
20 and pull just that zone that's got the perchlorate  
21 and it's essentially provided protection for those  
22 wells.

23 BURIL: And that's one of the things that we're  
24 talking to the City of Pasadena and trying to figure  
25 out how do we determine where that zone is and how

1 best to deal with it. That's part of what they're  
2 looking at by doing that pump/backer testing in  
3 their well with our own information for over here  
4 and generating over the next -- well, next few  
5 weeks, we may come to that. We may come to that.  
6 That's something we would have to certainly move on  
7 if we identify that to be the case.

8 BISHOP: I think at one of the task force  
9 meetings you had discussed the possibility with Cal  
10 Tech doing some studies and --

11 BURIL: Yes. That turns out to be contractually  
12 very cumbersome and something that the powers that  
13 be have said they prefer not to become involved with  
14 at the Cal Tech level. But we aren't hindered in  
15 any way from participating in the other research  
16 areas with other consortiums. So, you know, we have  
17 the ability to go out and do those other things.

18 BISHOP: Aren't there any grad students in  
19 chemical engineering over there that are looking for  
20 a project?

21 BURIL: I wish.

22 BISHOP: It seems to me if the resin situation  
23 is possible, it's not a difficult task to run a, you  
24 know, set up a small reactor and run --

25 BURIL: Yes. And in fact, that's one of those

1 things I talked to with the folks at  
2 Montgomery-Watson about. They're very interested in  
3 the resin approach. And they're, hopefully, going  
4 to get back to me next week on a proposal on what to  
5 do with resins, and we would be prepared to move out  
6 on that very rapidly.

7           Okay. It sounds to me that, at least for  
8 the immediate term, the interim ROD is on hold and  
9 we will continue to review that issue as things go  
10 along.

11           Okay. Well, we're moving right along.  
12 We'll get you out of here at 11:30 yet, James.

13           On the status of third-party concerns, let  
14 me just bring you up to speed on some of the things  
15 that have happened here at the Lab with two of the  
16 things that face us. And one, of course, is our  
17 negotiations with the Lincoln Avenue Water folks.  
18 We are awaiting their response to a format and an  
19 offer -- I won't term it a formal offer, but it's a  
20 format for settling the concerns that we had with  
21 them and them with us. We are not sure when they're  
22 going respond to us. We've been asking them now for  
23 some time to give us what they thought about our  
24 proposed agreement, and they've been taking time to  
25 evaluate it very thoroughly, apparently, because we

1 gave it to them last September and we're still  
2 waiting. So we're kind of in a holding pattern with  
3 them right now. And the negotiations are still  
4 open. There's no indication that they are breaking  
5 down in any way, but it is becoming more protracted  
6 than what we'd like to see.

7           In terms of the Vallier case, which is one  
8 up here at St. Bede's Church, claims for wrongful  
9 death and a variety of other things. Nothing has  
10 moved on that with the exception that we have had a  
11 document demand, essentially discovery demand placed  
12 on us and we are producing quite a few documents for  
13 purposes of satisfying their request.

14           I don't know that any of you will be  
15 contacted by these folks. Maybe you already have. I  
16 don't know. But I guess the possibility exists. We  
17 have --

18       BISHOP: It's likely.

19       BURIL: Yes.

20       ROBLES: I've been deposed by the Savary lawyer  
21 and the Vallier lawyer was there and was looking at  
22 contacting you folks too.

23       BURIL: So unfortunately there's nothing we can  
24 do to prevent that. So the likelihood of you being  
25 contacted in relation to that appears -- it is

1 possible, let me just say that.

2 BISHOP: I was just deposed on a site that the  
3 only thing that I was involved in was in San  
4 Gabriel.

5 BURIL: You're kidding.

6 BISHOP: And I drew the cooperative agreements  
7 with EPA. And so -- that was six hours, questions  
8 that were asked. So I think it's likely.

9 BURIL: Yeah, I would say it probably is likely.

10 I was deposed myself on a site that I only  
11 worked a couple months for my former employer, and  
12 it's a mess. That took me eight hours. I know  
13 exactly what you mean.

14 Okay. Sounds like --

15 BISHOP: Has anything come up with the articles  
16 that were in the -- calling for folks?

17 ROBLES: Right after that article thing, you  
18 know, the Committee for Concerned Citizens, right  
19 the next day, the purveyors put their document in  
20 there, in the paper, saying that's a total  
21 fabrication. We haven't heard anything else about  
22 it.

23 BURIL: Yeah. I think at the last task force  
24 meeting didn't they talk about the responses that  
25 Pasadena and San Gabriel Valley put out?

1 BISHOP: No.

2 Buril: Well, basically it came out in the  
3 following Sunday paper and both Pasadena and San  
4 Gabriel Valley Water took full-page ads basically  
5 saying that, you know, this is a bunch of crap. And  
6 I have heard that in the case that deals -- out in  
7 San Gabriel Valley, that they have, I think as many  
8 as 50 or so plaintiffs now and are proceeding with  
9 some form of a class action approach.

10 On the Vallier case I don't believe that  
11 they have really gotten anything more as a result of  
12 those kinds of ads and I think that we're still --  
13 the last number I heard was that there were 14 or 15  
14 plaintiffs.

15 ROBLES: And they're trying to get 50 plaintiffs  
16 to make it worth their while.

17 BURIL: So whether that grows or not is anyone's  
18 guess. Okay.

19 Other participation issues. I guess  
20 that's -- we kind of resolved that and I think we're  
21 going to talk a little bit with Andy and -- is it  
22 Viola?

23 CHANG: Yes. Viola Cooper.

24 BURIL: We'll probably talk about that a little  
25 bit after you've left, James, but I'd just as soon

1 hear what they have to say because that was tied in  
2 some degree with the task force and some of the  
3 other stuff.

4 Just as a point of interest when we talk  
5 about public participation, with all the newspaper  
6 articles and so forth that have been out there in  
7 the media and talking about this perchlorate issue,  
8 as well as the lawsuits, we have had I think only  
9 two calls from what I'll term concerned citizens,  
10 and both of them very tangential to what we are  
11 really concerned with here. One was dealing with  
12 microwave radiation from our antennas here, which --  
13 "Sorry, guys, those are for reception. They aren't  
14 for transmitting," so there's really no big deal  
15 there.

16 And the other one was talking about what  
17 we knew about the Hahamongna development here. And  
18 we just referred those folks to the City of  
19 Pasadena.

20 Other than that, we've had very little.  
21 In fact, that's it. So the public does not appear  
22 to be alarmed at this particular point in time.  
23 Certainly the water purveyors would portray a  
24 different attitude toward the perchlorate issue,  
25 because they very obviously have a reason to be

1 concerned. So -- and we're working with them.

2 That covers everything that we had on the  
3 agenda, save the site tour, which, James, I know you  
4 don't have time to go on.

5 CHANG: I can take a rain check.

6 BURIL: Oh, you bet. Not a problem.

7 ROBLES: We could give you a windshield tour.

8 Very fast.

9 BURIL: Bolt you down and ski.

10 Is there anything else that any of you  
11 would like to bring up as long as we're here and  
12 have a few minutes?

13 Okay. Well, this one was another quick  
14 one. I thought we would take more time on it. But  
15 this has turned out to a very good meeting. I thank  
16 you all for coming down and you, James, especially.  
17 It was good meeting you.

18 CHANG: Likewise.

19 BURIL: We'll call this adjourned and we'll meet  
20 with Viola and company afterward.

21 CHANG: You know, because my schedule is so  
22 tight, I would like to know when your next meeting  
23 is so I can be sure not to be here.

24 BURIL: Judy would kick me if she were here  
25 because I forgot to do that.



1 Does anyone have a calendar?

2 Oh, there is one other thing here which I  
3 neglected to do and do need to, verify there were no  
4 changes or comments to the last RPM meeting minutes.

5 BISHOP: No.

6 GEBERT: No.

7 BURIL: We can publish these as official?

8 GEBERT: Yes.

9 BURIL: Okay. Great.

10 ROBLES: I will say that in the deposition they  
11 took the meeting minutes that we had and read them.  
12 And one of their comments was "You said here 'No way  
13 in hell,' Mr. Robles. What do you mean by that?"  
14 Taken right out of the meeting minutes. I said:  
15 "You need an explanation?" So I find out they do  
16 read those things.

17 GEBERT: You had to explain "no"?

18 ROBLES: I had to explain no.

19 BURIL: I'm looking for action items from the  
20 last meeting here and I'm not seeing anything that  
21 is an indication that we had any action items from  
22 the last meeting.

23 No, there doesn't appear to be any. So I  
24 think we're in good stead with the action items and  
25 I think we're in good stead with having met when we

1 said.

2 Let's talk about our next meeting. If we  
3 follow protocol, the next meeting should be no more  
4 than 90 days, which would put us out into the  
5 December time frame. Although I think --

6 NIOU: December 1st is a Monday.

7 BURIL: Right.

8 ROBLES: Want to try December 4th? Thursday?

9 BURIL: What days are best for folks? I know  
10 James may have certain days that are precluded from  
11 his schedule, so --

12 CHANG: Mondays, that's my --

13 BURIL: I'm not really thrilled with Mondays  
14 myself.

15 CHANG: Monday is out.

16 BURIL: Okay.

17 CHANG: Tuesday is the safest for me because I  
18 always have Wednesday and Thursday meetings.

19 BURIL: Yes. Unfortunately, Tuesdays are not  
20 too good for me, but if need be, I can change my  
21 schedule.

22 ROBLES: Wednesday, then, the 3rd?

23 BURIL: Does that sound good?

24 CHANG: Wednesday the 3rd.

25 BURIL: All right. December 3rd. Do we want to

1 have the meeting here again?

2 BISHOP: Either way.

3 BURIL: Okay. Let's go ahead and plan for  
4 December 3rd here in the same meeting room at JPL,  
5 then.

6 ROBLES: And if you want to come in the day  
7 before and --

8 CHANG: Okay. I might do that.

9 ROBLES: Come the night before or afternoon  
10 before.

11 BURIL: If you come in the afternoon before we  
12 can give you the Cook's tour.

13 CHANG: Great

14 GEBERT: Time?

15 BURIL: 8:30 was too early in preference for  
16 James' schedule. I would propose we go back to  
17 10:00 o'clock, if that's amenable to everybody.

18 NIOU: That will be great for me.

19 BURIL: I like it better too.

20 GEBERT: Especially since the meeting didn't  
21 start until after 9:00.

22 BURIL: Yes, that's true. Okay. So 10:00 a.m.  
23 on December 3rd here at JPL.

24 Thank you all very much.

25 (At 11:13 a.m. the meeting concluded.)